

✓ Montessori Training Comic ✓

1913 Rome Lectures Manuscript: First International Training Course

The 1913 Rome Course was the first international training course given by Maria Montessori. The course was delivered orally in Italian with English translations provided simultaneously. Transcripts of this training course have survived and a copy is housed at The Library of Congress in Washington D.C..

The Montessori-Pierson edition of the book is an edited version of these same transcripts (Their transcript copy is housed in The AMI Archives in the Netherlands). There are noticeable changes to the text, but they don't seem to meaningfully change the substance of the text.

The editor of the Montessori-Pierson edition has chosen to rewrite sections for "a more contemporary readership" including substituting Montessori's usage of "man" and "he" for "people" and "they."

Neither the Library of Congress manuscript or the Montessori-Pierson edition include lectures on the material demonstrations.

I have organized this document around a personal account by Miss Clara E. Craig where she provides a complete syllabus of the 4 month training course she took with dates and lecture titles.

- I. January 16, 1913: **(Theory) Introductory lecture in the house of Marchesa de Viti Marco. Subject: General review of the Montessori method as introducing a new experimental science.**
 - A. Included Montessori-Pierson published edition (MP) as Introductory Lecture
 - B. Included in scanned manuscript (SM) as Introductory Lecture
- II. January 21, 1913: **(Theory) Statement of the program of the course. Guide as to the method of observation and study.**
 - A. Included in MP as Course Program and Guide on Methods of Observation and Study
 - B. Included in SM as Lecture I
- III. January 23, 1913: **(Theory) Social conditions of the child.**
 - A. Included in MP as Social Condition of the Child
 - B. Included in SM as Lecture 2

- IV. January 28, 1913: **(Practical) The biographical chart. Anthropological observations.**
 - A. Included in MP as The Biographical Chart and Anthropological Observations
 - B. Included in SM as Lecture 3
- V. January 30, 1913: **(Theory) Biological concept of liberty.**
 - A. Included in MP as Biological Concept of Liberty
 - B. Included in SM as Lecture 4: Freedom
- VI. January 31, 1913: **(Practical) Stature and weight.**
 - A. Included in MP as Stature and Weight
 - B. Included in SM as Lecture 5 (incomplete)
- VII. February 6, 1913: **(Theory) Practical conditions of liberty in the school. Environment. Didactic material. Teacher. (feb 7)**
 - A. Included in MP as Freedom in the School Environment, Didactic Material and Teacher.
 - B. Included in SM as Lecture 6
- VIII. February 7, 1913: **(Practical) Causes influencing the variations of stature. (Feb 6)**
 - A. Included in MP as Causes Influencing the Variations of Stature
 - B. Included in SM as Lecture 7
- IX. February 11, 1913: **(Practical) The head.**
 - A. Included in MP as The Head
 - B. Included in SM as Lecture 8: Anthropology
- X. February 13, 1913: **(Theory) Independence of the child.**
 - A. Included in MP as Independence of the Child
 - B. Included in SM as Lecture 9
- XI. February 18, 1913: **(Practical) Analysis of the average. Theory of the average man.**
 - A. Included in MP as Analysis and Theory of the Average
 - B. Included in SM as Lecture 11: Anthropology
- XII. February 20, 1913: **(Theory) Prizes and punishments.**
 - A. Included in MP as Prizes and Punishments

- B. Included in SM as Lecture 10
- XIII. February 25, 1913: **(Practical) Presentation of the Didactic material.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XIV. February 27, 1913: **(Theory) Generalizations on the conditions of liberty of the child in the family. Social study of the family.**
 - A. Included in MP as Social Study of the Family.
 - B. Included in SM as Lecture 13: Anthropology
- XV. March 4, 1913: **(Practical) Presentation of the Didactic material.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XVI. March 6, 1913: **(Theory) Method of giving a lesson. Comparison between this method and other methods.**
 - A. Included in MP as How to Give a Lesson as Compared with Other Methods.
 - B. Included in SM as Lecture 12
- XVII. March 11, 1913: **(Practical) Presentation of the Didactic material.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XVIII. March 13, 1913: **(Theory) Muscular Education**
 - A. Included in MP as Muscular Education
 - B. Included in SM as Lecture 14: Muscular Education
- XIX. March 27, 1913: **(Theory) Nature in education.**
 - A. Included in MP as Nature in Education
 - B. Included in SM as Lecture 16
- XX. April 1, 1913: **(Practical) Solid insets. Thickness. Size. Length.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXI. April 3, 1913: **(Theory) Attention.**

- A. Included in MP as Attention
- B. Included in SM as Lecture 17
- XXII. April 8, 1913: **(Practical) Limits of the Didactic material.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXIII. April 12, 1913: **(Theory) Imagination.**
 - A. Included in MP as Imagination
 - B. Included in SM as Lecture 18: Imagination
- XXIV. April 14, 1913: **(Practical) Cutaneous sense.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXV. April 15, 1913: **(Practical) Taste, smell, and hearing.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXVI. April 17, 1913: **(Theory) Education of the senses.**
 - A. Included in MP as Education of the Senses
 - B. Included in SM as Lecture 22
- XXVII. April 18, 1913: **(Theory) Intellect.**
 - A. Included in MP as Intelligence
 - B. Included in SM as Lecture 23
- XXVIII. April 22, 1913: **(Practical) Writing.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXIX. April 23, 1913: **(Practical) Reading.**
 - A. *Not included in MP.*
 - B. *Not included in SM.*
- XXX. April 24, 1913: **(Theory) Spoken and written language.**
 - A. Included in MP as Spoken and Written Language

- B. Included in SM as Lecture 24

XXXI. April 25, 1913: **(Theory) Will.**

- A. Included in MP as Will
- B. Included in SM as Lecture 25

XXXII. April 28, 1913: **(Practical) Arithmetic.**

- A. *Not included in MP.*
- B. *Not included in SM.*

XXXIII. April 29, 1913: **(Practical) Summary of the biographical chart.**

- A. *Not included in MP.*
- B. *Not included in SM.*

XXXIV. April 30, 1913: **(Theory) Moral education.**

- A. Included in MP as Moral Education
- B. Included in SM as Lecture 26

Works Cited

- Craig, Clara. *The Montessori System of Child Culture*. Rhode Island, Rhode Island Education Circulars, 1913. <https://archive.org/details/montessorisystem00crairich>
- Montessori, Maria. *The 1913 Rome Lectures: First International Training Course*. Edited by Dr. Susan Feez, Montessori-Pierson Publishing Company, 2013.
- Montessori, Maria. *Maria Montessori Lectures*. 1913. Reel No. MSS 19,130, Manuscript Division, Library of Congress, Washington, D.C.. Scanned by Emily Counts on November 28, 2025.

For private circulation among the members of the class only.

This version of Dr. Montessori's lectures being the translation by Miss Bateman of the report taken down viva voce; Dr. Montessori assumes no responsibility for possible inaccuracies in the rendering of her lectures, not having been able to revise either the Italian report, or the English translation. The distribution of these reports is authorized for the personal use of members of the Class.

✓ INTRODUCTORY LECTURE. ✓

In giving a course of lectures on Pedagogy it is often desirable to give in the first place an idea of the history relative to the subject to be dealt with; or to set forth an episode which serves to illustrate the deep reasons of the object itself.

If what I am starting to give is in the nature of a course of lectures on Pedagogy; what better prelude and what greater episode than this fact of finding ourselves face to face with one another. This; indeed; is a great episode, it might be called the first episode in this educational affair. More than eighty people; by dint of great sacrifices, have started from distant countries; have crossed the ocean, have traversed great expanses of land, and have come here; one person starting from Japan has begged to be excused for arriving late, because six weeks are required for the journey. There are people who, coming from India; are at this moment still traveling. From the United States of America, from England, from Germany, from Australia, from Holland, they have arrived. I know how many of you have had to struggle and to make sacrifices to come here, and certainly enthusiasm animates you.

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And I who stand before you, can say with St. Paul, "I, too, have made great sacrifices, to reach this place. How many years have I struggled along other roads than this one, without a ray of hope, without outside help, except that of someone who, being very near to me believed in me. And this person often said to me, "I go with thee as Moses went with the Chosen people through the afflictions to the Promised Land." Perhaps in sight of that Promised Land I, too, like Moses will disappear. But do not turn back."

So if there are these great facts, if there are these struggles and these sacrifices, they are but characteristic symptoms of every human progress.

This then is the picture, and around it as a huge frame is the interest manifested in so many different parts of the world by newspaper articles, by the establishing of schools and by the embassies,

And in addition to all those I mentioned, many other countries must be added, France, Switzerland, Spain, Portugal, Austria, Denmark, Belgium, Sweden, Norway, Turkey, Russia, Poland, Roumania, China, Mexico, Chile, Canada, the Argentine Republic; South Africa and Syria.

And it may be asked, "What is the cause of all this?" "What is the source from which this movement springs?" "What were the means of diffusion?"

The cause: a small school of children started five years ago in a squalid quarter of the city; where in mean streets and in a few houses ten thousand delinquents without fixed dwelling places were huddled together, and where almost all the inhabitants were illiterate; in a tenement house of working men, where forth^yor fifty

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little children from three to six years old received those who went to see them and showed a remarkable activity new to their existence, made progress superior to other children, in that at the age of four and one-half to five years, they wrote better than the children in the elementary schools: this is the cause.

Not great institutions, not someone endeavoring to spread an idea, only a baby voice; which echoed plaintively in every corner of the earth,

Thus people had no demonstrations: teachers who should go and transmit the work and the idea, were not solemnly prepared; there was no great work of propaganda, which to attain to such diffusion would require centuries. Some heard, some saw, all believed; it is a kind of "Act of Faith," a witness for conscience.

Certainly something was expected, and those who were looking for it recognized it. Not that it was wholly a spiritual movement, sine materia, devoid of any action during this time for propagating and making known these phenomena. To ^{cite} ~~sight~~, for instance, the classes^s held to prepare the Italian teachers; the first training class was held in 1908, in Baroness Franchetti's house at Citta di Costello. Many teachers came from every part of Italy. In this course for the first time I expounded the facts relative to what is called my method. It happened during these lectures that many of those present wept so that it seemed a sad course. So I said, "What is so melancholy in what I am telling you?" They answered, "We feel the birth of our conscience within us." Many wept for the faults of which they were till then unaware. It was the awakening of conscience which even here ^{was} ~~found~~ the characteristic sign of these first steps.

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Next, Her Majesty, the Queen Mother, took a great interest in the idea and wished to institute courses of lectures to prepare the Italian nurses, and also founded the school in Via Giusti.

Then the illustrious Mayor of Rome, Ernesto Nathan, becoming interested in the thing, and wishing to spread my method in the elementary schools of Rome, instituted a training course for teachers.

Moreover, another proof exists in the schools which little by little spontaneously came into being as autonomous experiments scattered all over the world. For there are today schools in Italy; in Switzerland, in Paris, in England, in the United States of America, in the Argentine Republic, in India, and through the labors of the Franciscan missionaries from Via Giusti; in Syria also, and in Japan.

Still another proof is the book which I published in Italian in 1909. Two translations of the book are today in existence, one in English and the other in French. The first English edition of five thousand copies published last April in New York by Stokes and Company were ~~wh~~ exhausted in four days, and five months later the book was in its sixth edition. The French translation was published last September in Switzerland under the auspices of the Jean Jacques Rousseau Institute of Experimental Pedagogy at Genoa under Professor Caporède. Today there is in course of production translations in German, Spanish, Roumanian, Polish and Russian. There is not in this book the exposition of a theory nor the defence of an author's idea, but only a description of facts which happened and were observed.

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As far as the author is concerned it is only a little history of her studies and tends only to show that she is a person initiated in ^{service} observation, prepared in the fields of experimental science and of natural science, above all, of medicine and of subjects which today are permeated with such studies as experimental psychology and ~~part~~ anthropology.

In this book then, to a statement of facts, is added a guarantee that ~~the~~ person who observed these facts was prepared to observe them.

The book has been much refuted. Some have attacked its originality, saying, "This is not a new method", and some its ownership, saying, "This method does not belong to the author". Now perhaps to the author of the book alone, never claimed to have made a new method nor her own method. The book was never called a "new method" for the education of children nor ^{my} "Method for the education of children". The English translation speaks of the "Montessori Method". I had entitled the Italian book "The Method of Scientific Pedagogy Applied to Infant Education". Now this title seems to have been more found fault with than the contents of the book, because every one said; "And where is the scientific pedagogy?" & "The book certainly is like a spring of water issuing from the rocks", as an Italian University Professor said. "This is alive, this description of facts that uplifts the spirit but where is the science? That science bristling ^{with} numbers which today goes under the name of experimental pedagogy?"

Indeed the translators wanted to get rid of this title completely and whilst the English book is called the "Montessori Method" the French book is called "The House of Childhood", "Le Case dei Bambini".

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Evidently I did not give the ~~Italian title by assistant~~ ~~any~~ have
I any intention of renouncing ~~it~~ the idea that inspired it. I do
not believe and I do not claim to have given a new method but I do
claim to have given a method for a new ~~in~~ science.

Our present state of civilization all comes from the great pro
gress of experimental science made in the middle of the last century,
the characteristics of our social life and the great intellectual
progress of our times have as origin ⁱⁿ the laboratories of the experi
mental science from which in all their greatness have sprung all the
discoveries of these latter days; discoveries that were nearly always a
adapted to have magnificent application to society. And what is needed
is just to find something similar which would take action on man, for
it is said, "If the social environment is so rapidly transformed,
man must be transformed; if society is varied there ought to be a
varied system of education."

The idea of applying the methods of experimental science to the
study of man is surely not new. In 1860 psychophysics was established by
Fechner. Fechner thought to apply to the study of man a method anala
gous to that in which Physics allowed of such great advances along
the road of scientific progress. And then Fechner sought to graduate
the instruments and the sensory stimuli for investigations on man
awaiting the reactions, and since these reactions could not be identical
and constant, he had recourse to mathematics, instituting averages for it
the calculating the errors in the manifestations of the reactions.
Thus laboratories and instruments came into being which by degrees
became more and more complicated. The first real laboratory was founded
by Wundt in 1878, who, instead of limiting himself to the physical
world ~~as~~ as Fechner had done, tried to extend his investigations
more into the world of physiology.

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And it is through him that besides psychophysics, psychophysiology came into being. Wundt sought fundamentally the time for reactions of the phenomena of conscience, one of his mathematical investigations being to measure them with chronometric instruments.

Thus on the one side by the impulsion of Fechner, the esthesiometric instruments were greatly perfected and the reactions complicated to the point that it was desired; for instance; to find out how man perceives the noise of a drop of water falling from the height of one meter. On the other side the instruments for measuring time were complicated so far as to produce chronometers which would measure the thousandth of a second. From all this complication of instruments a large number of laboratories sprang up and the new experimental science was established which has as its aim the study of man.

But the results of this science were not exact as the investigating instruments led people to imagine they would be. Analogous reactions in the same individuals varied greatly, and to obviate this great drawback it was thought to multiply these researches, extending them to a large number of subjects, since the large average might eliminate the errors.

Extending these researches to a large number of subjects with the always more explicit end of studying man according to the experimental sciences, not only were many scientific branches founded according to the individuals to be studied, (patients, those in a formative state, pupils, etc), but a kindred science came into being. And this kindred science is scientific pedagogy which seeks to apply the results of all these sciences which are suitable to the scholars so as to bring about eventually the reform of pedagogy.

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Now these sciences which are so wide spread, which have for their defence so many investigators, for their demonstration so many laboratories, and which, though started as far back as 1860, have left the world indifferent, the schools untouched, and the teacher the very same type as before. Today indeed it begins to be recognized, that more than the science of man, it has been a scientific effort to reduce man to limits not his own, a tremendous effort to reduce man to the laws of physics, a ruthless effort to reduce man to the laws of physiology, whilst the inner spirit caused such oscillations in the results, that no greatness of average has been able to dispel them during more than half a century.

It is known that in experimental sciences which have really given results having the qualities of discoveries which were applicable in practice, these results were above all determined by the conditions of the experiment. That is to say all the elements of the discovery can exist, but if the manner of circumscribing them is not discovered the method does not exist and the new phenomenon does not result. For example, the waves of Herz existed, but if Marconi had not thought of the ultra-potent stations, if there were not the coherer which allowed the Herz's waves being transmitted, the application of what was already well manifested would not have happened.

If we are to study the special results of the experimental sciences, we always see that when an actual fact was to be studied only a special method could bring out the phenomenon. Now rather than completely apply to man the method of other sciences we ought rather to apply to man a method analogous to that of the other sciences.

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When for instance, people wished to study the insects (for experimental science is always a science of observation even when the phenomenon is caused by the experiment so that they may be usefully observed), when people desire to study insects what do they do? They go where the insects live naturally and they try not to disturb them so as to see exactly all their doings. What does he who would study the plants do? He goes to botanize where the plants grow naturally. He who would study the peronospora (a vine blight), what does he do? He goes where the affected vines are. He who studies microbes seeks to give the environment they naturally have. And when pathogenous microbe germs for the purpose of hygiene are being studied, and it is desired to study those living in man, then an endeavor is made to give the microgerms conditions of life, as analagous as possible, to their normal condition of development (for instance, soups and gelatine are heated to a temperature of 37° (98.4° Far.) which is the temperature of the human body).

Why should we do otherwise when studying man? Why; in order to study man, must he be taken from his natural conditions? Why put him in a laboratory and torture him with instruments? Why ask that his existence be circumscribed and submitted to the experiment of a second? For instance, why submit to ^{the} test of a drop of water falling from ^{the} height, ~~of~~ man, who created everything, man, the greatest factor in civilization?

Let us do only what we did when studying all other living organisms, let us study man in his natural state.

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What do we do, however, for living organisms when we wish to study them? We give them the best conditions of life. We need to establish a laboratory for the experimental study of man with the aim of giving a group of human beings the best living conditions possible. Under no other conditions can this experimental laboratory be established. Let us reflect that to found a pathological laboratory today superior measures are necessary to those which are needed for a laboratory of experimental psychology, and then by making due relations between the microbes and man we must conclude how far we are for having given a laboratory for the study of humanity.

Give the best conditions of life. And then . . . ? As is done with other living organisms have them free and see what they do, disturbing them not at all or as little as possible, certainly helping them by every means in this development.

What do we do with the microbes after giving them the broth, the gelatine and the right temperature? We leave them alone during the whole time they are developing and then we count the colonies when they are developed.

Thus it is not enough to give the best living conditions, liberty must be given also, so that human beings placed in the most favorable conditions of existence should be free to develop themselves.

When Saint Francis of Assisi was asked; "Have you founded cloisters where your brothers can walk meditating?" Saint Francis replied, "We have wonderful cloisters for meditation. See! The chain of the Appenines. Those are the cloisters for my brethren!" Now when something great is to be accomplished for humanity; when

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we are to observe how man develops, we ^{not} do need the circuit, but the chain of mountains.

So the school and the home where man lives are the laboratory we require. This really is the environment from which has sprung what we call a method of education. Undoubtedly all places where man lives, all places where man lives free in the best living conditions; become laboratories of experimental psychology. But the place which is best adapted to real scientific research is undoubtedly the school, and these experiments ought to be made in a school where there are small children and amongst the youngest children in the school.

A fine field for experiment has already been found amongst the children of from three to six years old, for if the laws relative to the psychic development of man are to be discovered, man, must be studied in the period of the formation of these laws.

All biological science which has reference to adult individuals and to the individual as a whole was explained by the study of the individual in course of formation or else of the individual in detail.

Thus embryology has given the greatest light to anatomy, to morphology, in general, to pathology, and to almost all branches of biology relating to humanity.

Therefore it is logical that science should initiate itself in the child in its period of formation.

And this is what I did. Outside circumstances made it possible for me to place a group of children in excellent living conditions and I observed them.

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Now whoever undertakes to place man in excellent living conditions cannot limit his conception to those of a hygienic life because a man is not just a physical organism. To put man in the best living conditions is to ^{so} place him that he can develop his personality in its completeness. If those aids which had been conceded to me were necessary for the physical life, such, for example, as a hygienic house, possibility of food and bath, there had to be other means for aiding the psychic personality of the child. These means I gave. I only provided means to help the child to develop himself as he showed me his needs and as, of course, the light of my scientific knowledge prepared me to do. Now these means of help which are but needful and sufficient help for the development of life, ~~are~~ these means are the method of education.

I repeat and insist: I did not wish to originate a method of education, nor am I the author of a method of education. I have helped some children to live, and I have set forth the means which I found necessary, and these means are a method of education. And if these means of help are a method of education for children of this age, then all aids to the development of humanity are also methods of education. Then this is not a method of education like other methods, but it is the beginning of something which must grow and which is in no way bound to any personality which may appear as the author, but it is solely allied to human beings who develop in liberty. It is a history of liberty and not the recital of any individual's thoughts.

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Many ask, "What relation has this method to the other methods to day in use? For instance, with the Froebel method, the Pestalozzi method and with the method of Herbart?"

It would take much time to make comparison. For me it is sufficient that these three authorities were three great minds who had a philosophical concept which they they succeeded in giving and transmitting from generation to generation to all humanity. They are the ~~the~~ three great men that had ideas. But here no human being, man or woman, gives ideas. A pedagogue does not exist who has observed the existence of positive facts which happened to humanity in unfolding according to its natural laws.

To begin with the division is clear from the age of these pedagogues. If they should enter the room this minute Pestalozzi would be 167 years old; Froebel would be 131 and Herbart would be 137. They lived at times widely different from our own. The outside world was completely different. As a matter of curiosity the journey of a professor from Berlin to Leipzig in 1822 was described at a congress. In 1822 we are already a good way ahead of the times when the three pedagogues I have named were born. This professor took four days and four nights for the journey. When he arrived he was very tired and to get to the hotel he had to endure much for the streets were lighted by small smoky oil lamps, and when he finally arrived at his house to light his lamp he had to strike a flint. He was expecting a letter but as the mail arrived but once a week and had come in the day before he had to wait many days before getting the letter.

Those were the times when illiterate women made bread and clothing and all humanity lived by their obscure labors.

If today these three great pedagogues should appear in our world and should see woman emancipated from the home and knowing that she cared nothing for the material existence of men they would say, "We cannot live here." If they should know the number of books and newspapers we have today they would say, "Our minds cannot follow this great intellectual movement." If they should see mankind travelling, if they should see the tunnelling of the mountains, and men flying, and should know that from Rome to Paris a conversation in a low voice can be carried on, they would say, "Timely death! Leave us to our own times. We can do nothing for men at this stage of civilization."

And we should have to say to them, "Look, all these schools where men are developing are your schools!"

Thus it is not the schools which form man, it is not from the schools that he obtains progress; rather in our times men are instructed within the old limits (which our present civilization has entirely superseded, transforming the environment) in the schools where the program remains very nearly always the same so that new things are taught in the universities as if it were too difficult to learn before then of the new things which surround us, and we go back, for instance, to the story of Attila crossing the Alps.

But that voice which said to man, "Speak across the void;" that voice which said to man, "Fly;" can never be heard in the place where the newly born souls of our civilized humanity are in process of development. What a marvellous characteristic in this creative spirit of man which springs forth independently of every form of education or instruction; this great spirit which trans-

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forms the environment like a god, which pierces the mountains, conquers the air and annihilates distance, this creative spirit of man which enables him to perform such marvels independently of human teachers, which creates civilization as the pearl oyster creates the pearl, the madrapore the coral, the bees the honey and wax, this, this is the genius of humanity.

It is true that man also obeys the physical laws; if he falls from a height he crashes on the ground; if he immerses himself in water he loses as much of his weight as the weight of the liquid he displaces; that he has the same functions as all other living organisms and must take matter from the environment and assimilate it to support his prganism, but this is his own unique characteristic.

And if the problem is to help humanity just as the material forces were utilized (for humanity too goes forward toward progress along roads analagous to those of the experimental sciences) so then this spirit must be aimed at and acted upon that man may be helped in the development and multiplication of these forces which led him to such a state of civilization.

Now evidently in the schools, (if the teachers belong to a day so far distant in the past) this creative spirit must be oppressed. There must be eroneous conditions in the lives of the pupils, and if these are unnoticed, surely in the family life of the children they must exist also. It is true that the matter appears almost as a philosophical concept of liberty; man ought to develop freely in all the greatness of this potentiality, but when it is seen that this is not so, another factor, a social

factor, presents itself to the experience, not to the mind alone, and it is that, that the children need social liberty. They are undoubtedly in subjection rather than in the ~~xxxxxx~~ true conditions of life.

Here indeed is the first thing which strikes us when we are about to enter into surroundings such as the "Case de Bambini", (Houses of Childhood,) to observe the spontaneous phenomena of the children, when we remember what are the conditions and character of the usual children who live our life. And this will certainly form a great part of the development of the matters to be considered in our lectures, this great social question of the liberation of the children, and on the other side of the subjection in which children are situated.

The characters of the children were a surprise to me in the first place, and then evidently to those who heard an account of these phenomena. The children have shown that they possess naturally the very qualities that we wanted to produce in them with great and continued efforts after we had already hindered their development.

The children have proved themselves patient in their work, loving towards each other, capable of enthusiasm, with all the characteristics which would permit of their being called real sons of that humanity which has so marvellously transformed its environment. We see similar characteristics springing up in the children.

The phenomena are not easy to describe. They are partially described in my book and comprise its contents. They must be observed and studied by everyone who wishes to understand the principles. They contain all that comprises and is called my method.

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If I may be allowed to sum up the whole phenomena it is; that the children manifest a great intellectual development, greater than that which we commonly observe in other children, and above all a development of moral character, while they are in a state of indescribable; serene joy and peace which is a comfort and a lesson to us.

Indeed as in physical hygiene, the increase of a child's weight is a sign that his nourishment suits him, so in the field of the psychological development of our children joy is the sign that they are developing normally.

And joy is characteristic of our busy children; not only is this so; but by means of this continuous joyousness the material assimilation, and hence the development of the body, is so greatly helped that we have in many of our schools for the poor abolished providing the nourishment which was believed to be a humanitarian aid to the physical development and health of those children who had not the best material environment.

Thus it is the spirit which carries the body along with it and admits of its perfect development. You know how children under these conditions transform all around them. We cannot say that these schools have transformed the children; let us say the children have transformed the school.

It is they who have indicated the form of the new school, it is they who have constructed a method of education, it is they who have radically transformed the personality of the teacher, it is they who living in tenement homes have a fine social action on the souls of their parents; transforming the working people, it is they who have moved the world. It is they who give us this great hope, it is they who are the inspiration of our faith.

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~~And~~ whoever is with them feels that really all happens as natural facts of the life which pervades us. We ourselves when we are amongst them feel transformed; our soul is uplifted, we have a vision of a better humanity, so clear is it that we seem to have that supreme happiness to which all men aspire within our grasp.

And then we perceive that if the Science of Man comes into being this army of children will not only bear humanity forward on the road of progress as we today believe they will, but perhaps educating man in science, man besides advancing will moreover begin to climb higher, raising himself above these limits within which we with suffering are seeking to go forward, and to improve, and from higher up perhaps the world will seem greater to us.

And seen from heights perhaps all problems will seem easier and will solve themselves.

These children then will have grasped the banner of liberty which is the banner of peace, and which is power and the promise of the future.

MARIA MONTESSORI

MONTESSORI TRAINING COURSE

LECTURE 1 1913

(No Renewal) C465

6/29/83

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This version of Dr. Montessori's lecture ~~being the trans-~~
lation by Miss Bateman of the report taken down vive voce; Dr. Montessori assumes no responsibility for possible inaccuracies in the rendering of her lectures, not having been able to revise either the Italian report, or the English translation. The distribution of these reports is authorized for the personal use of members of the class.

Lecture I.

Yesterday one of your number translated my introductory lecture which was a sort of brief explanation, a synthesis of the substance of the ideas which I should develop during the course. It was a kind of solemn introduction between us, but I do not wish to continue in the same manner. I believe that a sort of familiar introduction between us is necessary and that besides a synthetical explanation of the contents it is necessary above all in really beginning a course of lectures to understand each other as to the method of procedure.

For example, in the synthesis a general concept of the material is given; then there is a program which tells in what practical manner we shall follow the development of this course. Thus the program is a sort of compact between us as to the method of proceeding, however much it may be a part of the proceeding itself, it is none the less, a separate side, a different aspect of the whole. The program in part you have had as a promise of a certain number of lessons in hours, which you are to be given; undoubtedly you must desire an explanation of intention which subdividing it specifically will explain this promise made in the mass and therefore means the development of a time table. This lesson must be the explanation of it.

I do not need to tell you who have come so far that you will certainly have all, at least, that is promised in this program. The hours in it are already divided in various ways; for example lectures and practical lessons are promised. The lectures will be my lessons. Now I wish to make a further subdivision in them. In fact in the exposition of this method there is so to speak, the illustration of a general theory and may be of a philosophy; and then there is the practical exposition of a real positive method entirely independent from the actual practice among the children: let us call the first lesson and the second lessons technical. The practical lessons with the children either by me or by one of my assistants in the schools where the children are, the theoretical and technical lessons will be given here or elsewhere.

If I expound first all the theoretical part you will feel yourselves, in time, too far from the actual exposition of the method which is surely the clearest and most interesting part. To obviate this drawback, I should like to alternate the theoretical and technical lessons; so that I should not first give all the theory and technique as though in two in two special courses, for example, I can to this end take different days, so that the theory may be given

on Thursdays and the technique on Tuesdays. Such a division would undoubtedly be useful; but I do not know if I could submit to it; because it seems like a bond. I should like you all to agree with me as to the necessity of being left free from every narrow bond which confines my action in any sense. And that you should accept this as a special characteristic of my teaching, which is based on liberty.

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Page 5 Lecture 1.

Then allow me to establish a few principles as a guide. ~~If instead~~ of the observance of a program, it will be ~~creation of results, this~~ probably will ~~give the greatest interest to this course.~~

What I say about the ~~theoretical exposition~~, I repeat for the practical, although the practical must of necessity seem more rigid than the theory, if we call "practical" for example the visiting the schools which already exist and of deciding certain hours in which groups of you should meet me or one of my assistants to see and observe what the children do. Who knows that from all that we call practical material, stable, tangible, something may grow, come at once into being like a creation if there is something non rigid which directs it?

It is true that we have here schools that are already established, such as the school in Via Giusti and that school which the municipality erected and which the Municipality has just started to transform, the school of Erminia Fua Fusinata; but if we wish to limit ourselves rigidly to a set form we could say from now on: these are the schools, ~~and~~ on the other hand when we are willing to lay aside limitation, we can say, "For the present these are the schools, but before we leave, who knows, by means of this living creative freedom, who knows how many other schools may come into being!" Schools which certainly are no dream, but a hope which I believe will be realized. You know that I have no serious schools which represent model institutions, complete realizations of my idea; but all that I have up till now is only an attempt an incomplete realization where possibly I have tried to bring into operation the fundamental unchangeable part which must be the same in a small school as in a large school where the extreme conditions are complex and perfect as in a school where the extreme

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conditions are insufficient in a school of little children and if one may say so of all schools and even of adults. There exists however the spirit which forms these schools. As to its application its external realization, I believe that during this course you will be present at the founding of new schools. A new Casa dei Bambini will come into being. You will see the children to whom my method has not yet been applied; to see how they act during the first days, and to make more instructive observations than those you are able to make in the already organized Casa dei Bambini. In this Casa dei Bambini we shall also adopt that artistic manual work, a part of education, which I refer to in my book under the Potters' Art. I know that many of you have asked explanations of Professor Randoni and I have spoken of a course of lessons. Certainly nothing could be better than that you should also have special teaching which in this case would have quite an Italian savour and a form which is much adapted to my educative method in that Professor Randone's ideas for the instruction of his art to children does not include a rigid program such as that of the manual training today in use in the schools.

Another branch which I believe will be brought into operation is that of agriculture which is so difficult of application in the city. But there exists a little village very near Rome Grotta Ferrato where the Franciscan missionary sisters from the Via Giusti have established a Casa dei Bambini with the orphan children from Calabrian and Messina earthquakes. Naturally, this school being in the country, this branch can be developed there and the place being near Rome it will be useful for us to go and observe in this school also.

Another and very important branch which I should very much like to show you is the Case dei Bambini in the school in which it came into being, and that is as a school within the home, and in particular in the workman's home. For reasons which would be too long to tell and which form part of the first lines of the story of this work, I am unable in any way to make use of the Case dei Bambini which exist in the workman's tenements here in Rome. Besides these Case dei Bambini which were the cradle of this method have never realized completely even the social ideal relative to this method, inasmuch as the teachers have never in Rome really lived in the tenements among the working people. Instead at Milan there exist Case dei Bambini in the model workmen's tenements of the Humanitaria Society which were built on purpose so that Case dei Bambini might be put into them; and in such tenements the teachers really lived. I think that perhaps it would not be difficult for us to finish up the course by taking a trip to Milan which might be instructive from many points of view, so as to study and observe these schools and their effects on the working population.

And this may be a statement of the program.

Nevertheless I do not wish to limit it to this; therefore I have left in the program itself ten lessons which are to be given by others.

My idea was that other people could fill up those which I should necessarily have to leave; for example; certain demonstrations in a laboratory of experimental psychology and of physiology. Though these institutions are very wide spread they may be useful in the last analysis, if I am not mistaken, to show that the hope is perhaps vain that salvation, as far as the school is concerned, comes from these.

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comes from these; and they may serve to make a comparison between the observations which can be made in a House of Childhood with their application to the eventual reform of pedagogy and the schools, and those observations which may in like manner come from these especial institutes of experimental science.

Also I should wish you to have lessons on quite another subject. You are in a city which is exceptional for its antiquity and for the history of its civilization; and since many of you are perhaps in Rome for the first time, I should think that it would be acceptable to you to get a more perfect knowledge than that which usually befalls one who, being a pilgrim, visits the city of Rome. Certainly Rome possesses great founts of inspiration in the relics of her ancient history; in the evidences of the succeeding and varied civilizations; for example the origins of Christianity which developed at the close of a great empire triumphant over the world. One of our dearest poets, alluding to the catacombs, tells this in a single sonnet, saying: "When the Roman Empire was at the zenith of its greatness the Christians went digging tunnels under the earth and such a hole was made that the Empire fell in."

Now I have promised that various archeologists, and also Christian archeologists, shall be your guides, so that you may upon this occasion carry away from this city the best impressions from the point of view of historical culture.

But it is not enough to set forth a program to give an idea of what will be said. I must also tell you of the way in which you must follow me. You will say: "We know very well how to follow a course of study. One listens; one studies; one learns!"

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No. An understanding is necessary before starting on our journey. You must not follow me thus. You must prepare to follow me also in another sense, in a different way which in the majority of study courses is not taken into consideration. If I should say that it is enough for you to follow me, to listen to me, studying, I might say that work, a form of diligence, all the material conditions, were enough for you. For example, it would be sufficient that you should weary yourselves in studying, that you should have the printed lectures, that you should read and study as much as possible, and should listen to the greatest number of lessons.

But it is not so. It is not in this way that you can learn what I wish to teach you. You must realize, if you have not already realized, that there are other ways besides this for learning, that to learn in these other ways there ~~exists~~ exists not only the material study, the intellectual labor, but there exists also the inner disposition. To be convinced of the existence of this possibility, and to try and apply oneself to this way of studying; this is the preparation necessary for you in order to follow me.

Even if what I wish to say is not very clear at this moment, let me ask you to trust me and to believe in me, and what you do not now feel you will feel in a short time; and will understand me. If, for example, you were to come here with the limited idea of certain studies to be accomplished and should ask of me the rigid observance of time and of work within these hours before being satisfied, you would not enter into the spirit of these lessons.

I should like to give something more than simply the lectures at certain stated hours. I should like to give something which is not measured in hours and which has not an intellectual substance. The work you will have to do to follow this course completely will not only be the material bodily work of going from one place to another, of standing, of fasting for an extra hour, which is material labor; and it will not only be an intellectual labor of applying yourselves to learning a certain number of definite facts as you did in the preparation of your studies. For, of course, you went to school to study and applied yourselves to certain intellectual labors. You have known what physical labor is and what intellectual labor is, but when you felt something which impressed you so that with enthusiasm you started from your distant countries, leaving relations, customs, country, and came without knowing exactly what you were going to find, you then undertook what was neither a material nor an intellectual labor.

Now we must continue working thus, and who works hardest in this way will most surely become a fine teacher according to this method.

In this sense of the work, when you are in a Case dei Bambini to observe the children, you are working and, I use the word laboring because I have used it up to now, laboring to learn something which I do not give, which the assistant does not give, and which no one else gives. If you do not possess this capacity, especially this sensitiveness which permits of your learning the intimate facts which the children reveal without warning anyone as to which is an important thing or which is worthy of claiming

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to which is an important thing or which is worthy of claiming attention, then ~~this sensitiveness, this capacity for observation~~ is the labor which you must accomplish in yourselves.

You will say "But this is not labor". This form of work has not yet become a custom so as to be recognized as one of the foundations of life, since it is the work which gives great development to whosoever accomplishes it. The manual laborer and the porter believe that the man who studies does not work. The porter says "Happy man; how much better off than I. He does not have to work hard as I do. He only studies." But the man who studies knows that he works and that his work is so hard as compared with the laborers that he can only apply himself to his work but a very few hours, whilst the manual laborer can continue a whole day at what seems fatiguing work.

And thus this work to which I am alluding seems lighter than the intellectual work of the man who studies. It would seem that the person whose body neither does anything, nor studies, but stays quiet and contemplates, is in a state of idleness, of absolute repose; whereas this person accomplishes the greatest work by which the human personality can be developed.

And; indeed, if human civilization were founded solely on manual labor and not on that of the intellect, what could men have done but remain in that primitive savage state which is forgotten in prehistoric times. It is the intellect which has given the impetus to so many developments of manual labor; it is that which has developed manual labor; it is that which gives substance and

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form to manual labor. But this same intellect needs another inspiration, another force, other factors. It is certainly not owing to reason that the real progress of humanity has come about, but by that grand inner impetus which has permitted men to become creators.

Now, to grasp and to develop this inner force, the motor power of all other forces which exist in humanity, this is what we must try to do, first for ourselves and for the children afterwards; but to act rightly towards the children, we must try to think of ~~xx~~ this and to feel this. The fact is certainly not obscure, as it might seem to one who has not himself experienced this change, nor is it practically inaccessible. If this were so a positive method would not exist; that didactic method which you came to study would not have resulted from a real fact, the experiences which are particularly impressive because of their reality. Thus it is not of something too ideal and fantastic that I am going to speak, but I am only speaking of the reality of the facts which happened, which I have described and which you yourselves have witnessed, and which are the substance of the exposition of this course.

When you are to observe a Case dei Bambini, as you did, for example the day before yesterday, and as you will do tomorrow and on other days in the future, you have something which has no human master; you understand for you sit down around a room without any professor teaching or illustrating anything, and you see children working without any teacher teaching.

It may be said, but what kind of school is this? Is it an imaginary school? No, it is a real school, for you can see that

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the children are developing more than all other children in the ~~xxx~~ other schools. It is sufficient to observe this to enter freely into the field to which I am referring.

Who can ever prepare one of you to observe these phenomena properly? You alone can prepare yourselves to observe as the children must develop themselves by their own exercises.

But in the meantime, the noting of certain determined facts which I have mentioned may serve as guide: that the children are working by themselves at an age in which generally children do not

work; that they are working continuously, for example they remain an hour, an hour and a quarter at the same exercise, at an age when if it so happens that we think a child can work we want to limit his work to ten or fifteen minutes; and instead, we see these children working for whole days, and we marvel at it because little children can generally stay at school but a couple of hours. And what strikes our imagination is that these children work long and continuously without tiring themselves, whilst we are accustomed to observe that whosoever works grows weary.

Our effort in life, we who love children, is to keep them happy, to keep them quiet and peaceful; to this end we use many aids, we try to make ourselves children and to joke with our children. And what has not commerce thought of to make the children happy? What games has it not produced to make them laugh and to please them. We ourselves, even if we are unable to assimilate this nourishment, the fact itself is, however, accessible to all.

Hence in this environment where no teacher is seen giving lessons, but where someone is seen who comes close and touches and helps, this fact must stand out, and even this fact is a consequence of the first, that there is something in the inner child which makes him act. If it is true that there is no effect without a cause and if it is true that perpetual motion does not exist there must be something which makes him move.

I am not speaking of something mysterious, but I only say that these children spontaneously develop activities existent in them, and this is a demonstrable fact, that if these facts exist these others must of necessity exist also.

Besides, in nature, does not everything follow this order? Are not all living beings characterized by their spontaneous actions? And why should man be the least alive of all? Why should he be an exception to this rule, and not have spontaneous activity? He will have it under another form, he will not have it in the form of instinct, he will need help to develop it, but what is certain is that the help which exists in nature is profoundly different from creating something living.

Hence, there exists this something which we must develop. Therefore we cannot teach "I am the teacher, and I tell you what I know and you must learn and repeat." This is not helping something which exists and which must develop, whilst this matter is a question of helping something which exists and which must develop without a teacher. It is sufficient to admit a similar fact to understand immediately what must be the action of whoever wishes to help some living being, of he, who, for example, wishes to help the insects. The insects are so tiny as compared to us. What can we do for an insect? At the worst make him a prisoner. We should like to help the birds. What can we do to help them? Put them in a cage and nourish them artificially, prepare them a nest, protect their young, that is how we help the birds. That is to say, that when we from outside wish in this way to help a living being, we have to begin by making it a prisoner and by taking away and lessening what he had by nature, by giving him with much labor in a reduced form the same things which developed the existence of the beings we are dealing with.

And if this is so in regard to the inferior animals, how much more so of man? When we wish to render him fit to learn certain determinate things? First we have to make him a prisoner and diminish his activities. It may be said that the whole substance of my method is summed up in this; avoid this cramping imprisonment, do not give in a small way those aids which nature bestows so bountifully, but instead watch the forces which develop thus as we can indeed watch the smallest and humblest insects and the birds and ourselves grow greater from this contemplation.

Also as to the type of teacher? What a difference between the one who imprisons the child and imposes trifles upon him, and she who contemplates the human personality spontaneously developing. Let us compare the image of the poet and the scientist who are both inspired or who develop the scientific passion by watching living beings in their natural state with the image of the hunter or the boy who catches insects just so as to have a grasshopper and to feed it.

This, then, is what must be developed and this is the labor to be performed. Let us work to understand this and to enjoy it when we are with the children. Have faith in this, a meritless faith since the facts exist, but even so let us call faith this feeling of the anticipation of a reality which as yet we have not touched with our hand, and if we have touched it with our hands in its beginnings, there remains always the faith that the beginning will have its continuation. These facts are certainly not new, they are not the setting forth of something original: that man develops himself by himself, that he only needs help, which help however must act from within.

The Bible concepts state the same thing and the New Testament relates it too, in, for instance, the words attributed to Christ on the Last Judgment. When Christ wished to judge man and to pick out those who had acted in the best possible way and those who had acted in the worst way possible, since the former were to have eternal glory and the latter eternal damnation, what did he say? To the latter he said "For I was an hungered and ye gave me no meat, I was naked and ye clothed me not, in prison and ye set me not free." To the others, instead, he said "Pass into the glory which awaits you, for I was hungry and ye gave me meat, I was sick and ye visited me, I was a prisoner and ye set me free." And these asked him "Lord, when saw we thee in need, sick, an h hungered and a prisoner?" And he answered, "Inasmuch as ye did it to the least of these, my brethren, ye have done it unto me."

What does he say by this, that the greatest merit of man is to take away the obstacles to development. He does not say "Come, blessed ones, you who have made some man greater, who have benefitted the world;" no, he says, "You who have taken away the obstacles, the sicknesses, the imprisonments, the hindrances to the development of man. Come enter into blessedness. And you who, encountering an obstacle to the development of man, have not removed it, you have missed doing the only thing that you could do. You can do nothing more. The only thing that you could do, that was within your power, was to remove the obstacles so that humanity might develop."

1,16.

This is the secret of deriving the greatest good from
the efforts of man, It is within our power and constitutes all
our merit ^{or} demerit and it is within the limits of our strength to
remove obstacles to the development of the world. *Contemplating*

MARIA MONTESSORI

MONTESSORI TRAINING COURSE

LECTURE 2

1913

(No Renewal)

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6/29/83

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Lecture 2.

In my introductory lecture I sought to give a synthetical idea of the material to be developed, and in my second lecture I have sought rather to constitute an agreement between us by a better understanding about the development of the material itself. In the meantime we have visited the children.

During my first lectures I have sometimes hinted at that the fact ~~is~~ an objective point of view as to the observation of children was lacking and hence, whatever may be believed, a real experimental science for the study of them was also lacking: and I have also hinted at another fact, that the children, being neither in a state of liberty nor on a level which should be proportionate to the development of the external environment, they (the children) must be in a state of oppression which I have called the lack of social liberty.

Today I would like just to set before you the children we are to study, that is to say the children who in this world of men live today amongst us. Always when we wish to make an experimental study and to begin a science of observation a general review of the object must be taken.

It will seem strange to you that I should say, "I wish to set before you the children who live in the world today." Do you not perhaps know them? No, you do not know them. I say that the children are in a state of oppression. You will say, "But we love the children, how can the children be in a state of oppression since they are the object of our most tender care?" But having some knowledge of social phenomena you know that love is insufficient for the solution of the problems of society. Women, too, are beloved objects, and yet we have a woman social question which concerns the oppression of women. My thesis today will be precisely this: To outline in a brief sketch the state of oppression of the children.

Naturally I do not speak of unhappy children, but to say that the child of today in the social state in which we live is in a state of oppression; just as when it is the woman question; we do not wish to refer to a certain individual woman, but to the woman question, which concerns all women.

It is well known that social equilibrium is neither founded on the instincts of man nor on the sentiment of man, but on right and on an idea of collective justice recognized by the masses. Take for example the administration of justice. We do not leave it to the sentiment of individuals, but we turn it over to the law and we know that if individuals are outside the law they are surely oppressed by certain injustices as compared to individuals living under that law. Instead the child is in great measure confided to love, to the instincts of humanity, to the individual conscience.

One of the principles which we have recently stated is without doubt the right to personal property; this right to personal property is no longer protected by the individual, but by society, so that there is this advantage for all of being spared the great labor of having to look after the defence of our individual property. We see that this is a progress over the times in which the individual himself had to undertake this egoistic task. But things are not on the same basis as regards the rights of property of the children.

We have in society facts which are tolerated with the greatest indifference and which represent a profound wrong to the property of the child. When in a community we see that these injuries to the rights of the individual exist, let us say the crimes which are passed by indifferently and are as a custom of the crowd, then this society is uncivilized.

Well there exists a fact which may perhaps make you smile, but which is profound: there exist wrongs which are tolerated without scruple, which are offences in regard to the property of the children. One of these offences which is an indication of an inferior state of civilization as compared to the higher state of civilization which we may contemplate for the future is the fact of the wet nurse. It is permitted with great indifference that the milk of one mother, which is the property of the child of that mother, should go to benefit another child. In this case the child of the wet nurse is deprived of his property. What property? Of his fund of milk; of his capital, milk; and his very existence depends on this. And who is the individual that we defraud of his property? He who is poorer, he who has greater need of his health for his struggle in

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society; and yet we say this is not an offence. And this fact that is not an offence is a great illustration of the inferior level of civilization on which we leave the child as compared to the adult.

You will say "But it may happen that a child be so unfortunate as to have his mother unable to nurse him, and then he must have recourse to another mother." But how many adults are unhappy, yet they do not for this reason rob another so as to be happy. When an adult is unfortunate he must bear his misfortune and not even think that his misfortune may be transferred to another.

Now the fact that the conscience of the mass tolerates this as a simple phenomenon, just as a savage tolerates that a robber takes the property of another and even boasts of it saying "I am stronger because I have robbed another, hence I am worthy to carry the sword." This fact evidently shows that there is a weak one who has no law for his protection. For this reason society should feel the whole injustice it commits.

You will say "But this is an exceptional fact." But all differences are exceptional. Woe, if all men in our society were assassins! Thus the difference is in the percentage inferior to the wet nurse; and yet we know that when in a society, or it may be in a country still uncivilized, a great evil happens and the population does not feel a great indignation, then it may be said that the population is on an inferior level of civilization because it has no reaction, because it does not feel this offence. It is not the fact in itself, but as the indication of a state of things, that this fact has importance.

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It may be said that this is all the title of a vast drama: if such seems such a great injustice that an offence may happen in the midst of an indifferent people, certainly there must exist a whole series of injustices which we are accustomed to bear or of which we are not conscious. We are not conscious of nor do we know the children: this general survey which discloses all is lacking.

Now this objective observation which begins to recognize the child in our society is the science which has already in part developed. For example, up to a few years ago we saw in the child only the most evident things, as that the child is of smaller dimensions; and then when it was ~~an~~ a question of nourishing a child we took only a smaller portion of our food and gave it to him. When he was sick we only gave him a smaller dose of the adults medicine and thus he took care of himself.

Today we know that this was a great mistake and that this mistake belonged to a period which we have already passed; a period in which child hygiene was never thought of, in which the physiological study of the child had not arisen which revealed to us that the child is not only a grown person of smaller dimensions, but that in all the inner part of his organs, of his tissues and functions he is a different being from the adult; and that it is not enough to decrease the dose, but a profoundly different treatment is needed, and hence a special food for children is necessary and a special branch of medicine, pediatrics, has risen amongst us. Children have almost the same sicknesses as adults, but they must be treated in a different way.

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And from this, which involves the understanding of the child being, a great progress in infant physical life, a progress from which we have gained a striking diminution of the mortality in the first years of life, and a still greater exuberance in the physical development of the child. It was not so when the child was left to the maternal instincts, and yet what more sacred, more beautiful, safer than the maternal instincts? This is an idea, a conviction, it is not science. When instead, science realized the fact that the child is different, it was seen that this maternal love was not of great value. Let us leave out of the question the wet nurses who take away the milk from their own children. But it is known how superficially the mother in the first year of her child's life, when however tenderness is greatest, considers the need of the child. You well know the principal cause of the great infant mortality during the first year of life is a very simple cause which has reference to feeding, and in particular to the fact that the babies are not nourished according to schedule and to rations, but following the indication of their cries. When the baby cried the mother fed him. Now babies cry for many different reasons; the mother, however, has only one method of consoling him. It is known that little babies have the instinct of sucking, so that they do not only suck because they are hungry, but also only as a mechanical stimulant; and it is known that this instinct is one of the most providential of nature. From this came the fact that the baby who cried, no matter what the cause, finished by eating.

Now suppose that one of us was in this sad condition: that for example we were sick, supposing we had a headache and if, not

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not having the strength of will which tells us not to cry, we had cried, supposing someone made us eat luncheon and that if we should continue to suffer more and greater sicknesses, that we should be given ^{upon dinner} dinner until death supervened; this is just what the maternal instinct did for the child.

It took the eye of positive science to discover something so simple because within everyone's experience; that though one might cry for various reasons, one could eat in just one case: at meat times with a special ration. And if this fact which is so simple that it is the experience of all society has not sufficed to illuminate even maternal love, what would become of man abandoned to the instincts of humanity if science did not help him?

Now when positive science under the form of physiology, of medicine, and of hygiene dictated the first rules for the feeding and physical treatment of the child, only by the fact that it has touched humanity on some points, it has not remained so barrenly closed up within its scientific doors, but has gone beyond it, has undoubtedly opened the road to a vision and even to a social progress, it has immediately transformed the social environment so that we may say how few years ago pediatrics sprang into being and we can count an immense number of children's hospitals, of hygienic institutions, and the splendid transformation which there is in all civilized nations in regard to this branch of the treatment of children. And, I repeat, not only is there the hygienic application of the care of the child, but almost an opening of

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conscience to new ideas and forms of justice. For example, that the mother should feed her son: here a moral principle has come into being. Who does not know that formerly it was sufficient to be rich to have amongst the forms of luxury that of having one's child nursed by another. Later on; instead, it was felt that the child who was nursed by his own mother could be saved, could become beautiful instead of ugly, strong instead of weak. And this fact that the child could be saved, so that we have thousands and thousands of living instead of dead children; this possibility of influencing life, this is one of the greatest impulses to the progress of humanity.

But as the child is not only body, we cannot say that the mission of science is finished, or that all is accomplished when we have thus materially saved the physical life, health and beauty of the first years of infancy. If a few years ago it had been said, "Look; what a bad thing it is that the mothers do not nurse their children, that the babies are swaddled, that they are not bathed, that the mothers do not think of any other way than that of feeding their babies irrationally, it is humanity which murders the children, the mothers are the cause of the death of their children; the answer would have been: "But why slander humanity which loves the children in this way?" How can you say that the mothers murder the children since these form the best hope of their lives?"

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Nevertheless, today, only because science has enlightened us, we understand that this was a state of savagery and not of civilization.

Thus; today; we are uncivilized; I believe, in another point of view, in that which regards the completion of this work for the salvation of the children. I believe that the child is today oppressed, if not materially in the body, surely in the spirit, by those who love him, but in an unenlightened way. It would be enough also to observe the external facts, the objects which are met with, as at first it was sufficient to observe the children swaddled, unclean and crying, although people are now beginning to think that children exist as social beings. Although it is not perfectly just to say this, but speaking along general lines, which are the lines of our social level, in this respect we can say that, if we observe in the shop windows, if we judge from commerce, children do not exist in this society: there is only one sign that they exist: the toys. If we want to buy furniture, sofas; chairs, tables, washstands, combs, brushes for them, we shall not find them! Then these guests who have no house! They must adapt themselves to and use those of the adults. Let us for a moment first make a comparison as regards ourselves, if we were constrained to be continually consoled like babies to whom one always gives something to eat, if we were obliged when we wanted to sit down to climb up onto a throne without a staircase, to eat at a table much too high, if we had a huge brush to clean our nails, and so on down the scale we would certainly feel that it was not an environment adapted to our life.

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It is true that the child can adapt himself to all these things, but all these things are a sign, that the rights of the child to live as we do, since he is with us, are not yet recognized. There are only an immense quantity of toys; if we could transform the toys into furniture and objects necessary to the practical existence of the children, we should see that the children would not need further efforts on the part of the adult individuals of their times because they would have plenty of things. Evidently this lack of necessities in industry, and on the other hand this enormous quantity of this mysterious something; the toy, is a sign of prejudice, certainly of the fact of blindness to the real needs of the child. Whoever wishes to be a partisan of the plaything, cannot do so unless thinking that it can substitute the real needs of life, and this disproportion between the nothing and everything reveals profound error. It may be said that we are anxious to amuse the children, but that, however, we esteem them very little because we wish to amuse them as the ancient tyrants wished to amuse the low ignorant people with carnivals and masquerades; that we do not wish to draw them from this inferior state towards a superior, as for instance is done with the masses, giving them classical music and the theatres, but we wish to give them something which keeps them in this state of inferiority, just as the tyrants gave these low amusements to the people when it was their aim to keep them at a low level.

At the same time, almost parallel with this great eagerness to amuse the children thus, we know that there exists, however much it is partially discontinued and even this is brought out by

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science not by love, for it is very recent, there exists the use of punishment sometimes so severe as to strike the children. Of course to strike the children is not considered by us in the same way as striking a man on the street would be, inasmuch as the man is strong and the child is weak; but it is well known that in many educational institutes corporal punishment still exists. What am I saying? Congresses were recently held discussing whether or no corporal punishment should be abolished, and if its abolition would not eventually bring about a lack of discipline, and hence a defect in the formation of the child's character.

Thus these facts of eagerness to give inferior amusements and corporal punishment, and beatings, tells us that the child lives on an inferior level of civilization to ours, and that he is not understood by us. Whilst we keep the child in this sense on an inferior level we do not even trouble to understand him! Our solicitude, conscious or not, is that he should be heard by us the least possible, as the tyrant who was afraid to hear the voice of the people's rights and desired to pacify them.

Now whilst we keep the child in a condition of inferiority in certain points of view, in others we wish to have him exactly like us. We make a great jump from this unknown and crossing the unknown, we wish to enter into the known, which besides is natural for man. It was thus also when men, seeing that the child was simply smaller, gave him the same food in smaller quantities to eat and cared for him with the same medicines as ours in smaller quantities. Thus morally today we believe that the child is a being

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like us only smaller; we do not consider for instance that if he is in the process of formation bodily he is a process of formation mentally, spiritually, and hence in his moral character, and that he needs much help to become as we are and therefore he must be treated in a different manner from us.

One of the first things that we demand from a child, however, is submission, and it is natural. If we are these tyrants who seek to still his voice it is in keeping for us to demand his submission. Thus we wish his submission. Why? Because we say we are superior to him and understand more than he. Therefore what ought he to do? He ought to be subject to us and when we have taught him to be subject to us he will become like us. This is absurd, just as absurd as it would be for us tomorrow to say to our child, "Make yourself as tall as I am when I return home this evening." We who wish that he should have strength of will, we claim that this will yields before us. We see that he does not have it, and then what do we do so that he may have it? We seek to break it. That is to say we do everything that would be likely to break it. We desire that our children should have character, should grow into people of character, we say morally to the child: "Be a person of character like such and such a person who has much character, like such and such people who have shown great strength of character, therefore you too be a person of character."

If then this inner development of the child's personality may not have sacred laws which we ought to seek to know so as to respect them, we have not yet set ourselves this problem. I once

saw a father with the instinct of an educator, which is, however, a fine quality, for how many fathers, especially among the people, bother at all to be educators in any sense. Then I saw this father who certainly had the quality of educator leading by the hand a small child evidently weak who had his legs bent by a slight form of weakness, not rickets, bent by the fact perhaps that the child remained too long on his feet. The father was walking and dragging the child by the hand with him. The child was crying because he was tired. The father said, "When thou art with me I will teach thee no vices: I will not take thee in my arms as thy mother does; when thou art with me thou must obey and walk." Evidently this father did not realize that the child's lower limbs are weak or that his child in particular was a weak one, that the child ought not to walk, he only thought that he was the father and wished to educate his son in this way, so that the latter should walk as he did. Now this outstanding fact in the man of the people is the same fact only more refined in the intellectual man and woman of our times. And if we have seen in this sad history that from remote times till our days the children died, were defrauded of their earliest food, and had to twist their bones to follow a foolish father, we must understand how many chapters this drama of the oppression of children has.

Now with all this the child is not left in peace; in a certain sense it may be said that he is left alone since we leave him to himself. No, rather there is something which concerns him

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in the law of social labor: the child must work, he has a legal obligation. Education and the school are his work. In social labor there are so many privileged ones who may be exonerated; from education today certainly no one; every one must be educated, and it may be said that the child who comes not out of the tutelage of the family environment, enters another tutelage. And let us note another fact that begins to be visible to the world: the lack of a guide in the treatment of a child. It is known that the child at school must be educated and must learn certain definite things. What things? Why things which we do not ~~give~~ take the trouble to study. We give him the same instructions as we gave many centuries ago and we teach as one taught in ancient times. Certainly children are obliged to learn; they must learn certain definite things within a certain definite time. If there should be a certain definite law according to which the mind of the child could learn and in this law time also could be decided, this today would form the ideal aforesaid experimental science of scientific pedagogy. But it is not surely something which enters into the practical operation of the school. It is known that the children have to suffer to anguish in giving proof of what they have learned so as to pass from grade to grade towards the goal which we have predetermined, which we have decided. The children must listen to a person who teaches but not only must they listen but they must listen in certain definite positions. Is it true that they can listen standing? No they must listen sitting sitting and write sitting too. Now we know very well that this fact of the erroneous position of the scholar brings out great evils in the physical health, and the scholar's scoliosis (spinal curvature), is the same that illustrates this fact.

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There is therefore scolioses which is called scholars' spinal curvature, that is to say a form of weakness which is not rickets, which is not tuberculosis, but is a form of degeneration produced by the fact that scholars must listen in this definite position, a position which is not necessary, for one can listen in any position. And the scholars' scolioses is not the only scholars' sickness; many are the doctors who have studied childrens diseases relative to this fact of their being scholars, and it is known that there are other diseases of the scholars, for example anemia, neurosis, neurasthenia, etc., so much so that doctors and hygienists have said in regard to the schools "It should be necessary that all the teachers study medicine." Moreover, for example, here in Rome an assistant supervisor of education has said "Even the janitors ought to know medicine." And doctors have been instituted who should visit all the scholars so that the diseases with which they are afflicted might be noted. It is said finally that it would be well to have also a small hospital in the schools, and beds, because there come times when the children feel faint. And you will still find in the normal schools relics of this hygienic reform. Everyone is made to study hygiene, but not however on that account does it absolutely prevent diseases, and it is said "At the worst we will have a hospital annexed to the school."

Now this is the place where the new humanity is to be formed, and all these evils come because the child is learning things of which we do not bother to ask ourselves the necessity.

In the schools a principle of justice exists. It is

In the schools a principle of justice exists, it is said. There is an equaling up, all the children are treated alike. It seems that there may be a dawning of social justice which enters the schools, and then this which seems justice leads to one of the strangest confusions which is today in process of correction, always, however, by means of a scientific observation of the individuals, but without this scientific observation having yet been able to bring in a really practical reform. We see in what this justice consists, let us see what is this equal treatment. Seated together are intellectually inferior children and very intelligent children who will become the intellectual directors of their times, very healthy children and children continually sick, morally deficient children and children who have heroic feelings in formation within them. Let us look at the adults: the saints of the times, the heroes, the geniuses, the governors, have all been to school together on the same benches with the delinquents, with the insane, with the idiots and with the epileptics of the times, and have grown up together.

These are the outstanding facts. And where there is an outstanding fact there must of necessity be an infinity of less noticeable ones. If something dramatic is happening in an apartment people pass without noticing anything even, yet this

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something dramatic exists; but if some great drama happens to a city, then all feel it. When we are conscious of an outstanding fact, then behind this prominent thing there are so many other less apparent facts, or at least there may be so many other less apparent things of which we are still unconscious.

We can only say that if today the child loses the uprightness of his skeleton, ^{injures} ~~of~~ his intestines or his visual organs by a fault of the school, clearly the child's whole personality must be greatly oppressed. To illustrate this may be the scope of another lesson, probably it will be the moral of, the explanation of

the whole method but to give this with ~~anecdotes~~ an anecdote, an idea of the thing let us tell what would befall us adults if there happened to be one of these facts which we call less apparent and which have not as yet claimed the attention of the educator and which however happen in the case of a child. Let us suppose that adult individuals of great intelligence and with the ~~inner~~ ^{inner} spiritual impetus should be perfecting works of great importance; let us suppose for example, that there is a poet who is writing a poem in the moment of great inspiration, or that there is a lawyer who has to defend some one and who sees in a flash what is the line of defence to bring him to a solution, or that there is a mathematician who feels ~~the fact~~ that he is just about to find the solution, of the problem of which he has thought of for so long; and at this moment there enters an individual who has great authority over them and who wishes to show them an object, for example, to let them see a fine new suit. They would say: "But who is this person who knows nothing of what was coming into being in us? Who does not understand, that at this moment we are losing a great inspiration, that probably mankind will have a poem the less, a man will continue suffering injustice and the mathematical solution which would have given a new impetus to progress will not come into existence and all this just to show a new suit which he has made. He is ignorant that he has destroyed in us at this moment a poem, the life of a man, a mathematical calculation."

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But for these children, probably, the inner life is destroyed; they do not lose an incident in their existence but perhaps their very existence. Here is the profoundest drama which really claims the attention of all and which needs an immediate solution, because in solving only this all the rest will solve itself without labor, without need of thinking that the children have sight that is being worn out, a skeleton that is being deformed; and that all that burden which seems to weigh us down will disappear of itself, provided that one goes to this sole point "It is said, "Seek God before all else and every thing else will come." It is useless to trouble your self in the solution of so many other problems, of so many reforms one only is sufficient. And then if the science of observation must come into being, a science which must in itself bring in the reform of the school with the reform of human life, this science will be for us a revealer of marvels. And we have never known this profound fact, we have never yet considered it thus as a positive science has done when it set itself to study life, the life of plants, the life of animals, the marvelous functions of the organs and which has revealed to us the marvels of nature. Surely this science will reveal to us the wonders of the spirit. It is said: "How great positive science is, how ~~long~~ beautiful are the marvels of nature! It seems as though nothing more glorious must develop. There as it was said was the science of created beauty, here it would seem the science of the Creator and it is said how ~~great~~ deep; is the science of God."

MARIA MONTESSORI

MONTESSORI TRAINING COURSE

LECTURE 3 1913

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LESSON III.

You know, that in scientific pedagogy, as it has developed until now, there exists a method, for the observation of the child. As in all sciences there must be the guide of a method. Therefore we do not say to the modern teachers who are to be initiated into the scientific method: "Observe your pupils;" we do not vaguely say, as some metaphysical pedagogists used to say: "It is necessary to know the child before educating him"; but we do say, "You must make your observations in this way, following this exact method."

That is, for an affirmation we substitute a method and a guide, and this guide which has been given to the new teachers for the study and observation of their pupils, has taken the name of "biographical chart", that is a kind of register wherein the biography must be written according to a special method. Thus, for example, in the registers where in Roman schools they used to write the marks received by the children, there used to be a certa

tain guide. Every teacher entering a new school kept by the scientific method must possess a biographical chart. Almost all the positivists who wanted to make an innovation in the school from this point of view, have had their own biographical charts, therefore do not wonder if I too have had this desire. I have also tried to devise a special blank for the study of the pupils. And I did not do this to add to what had already been done so amply, but rather to reduce it still more, that is to say I sought to simplify the biographical chart as much as possible and to make it more practically accessible to the teachers, so that they could really fill out this blank, for generally these biographical charts are so complicated, as to remain in a theoretical state.

The biographical charts consist essentially of one part, which is used for the questions to be asked about the pupil's history, questions referring to the conditions of his family and to the development of the child in particular as far as diseases, etc. are concerned.

There is also an anthropological part, which guides us as to the measurements to be taken so as to study the pupil from the morphological point of view.

There is also a blank giving the directions for psychological examination of the child.

Almost all these guides, show measurement to be taken, examination to be accomplished, with special reactions or instruments. The majority of biographical charts try or are satisfied to try, to catch a moment in the child's life, for instance as

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concerns anthropological examination, it is suggested that certain measurements be taken that observations be made of certain particulars about the morphology of the body, which are considered sufficient to determine the normality or not, of the child, and the present condition of his physical development. Much the same thing is done in the psychological examination: an attempt is made to test, the attention, the memory, the imagination, etc. with special reactions, and a guide is also given for judgment thereon, and also this examination is repeated when the pupil leaves school, at the end of the year.

I have also given blanks needed for the anthropological examination, representing a similar guide, so as to tell, as I have done in my chart, what measurements should be taken when the pupil enters the school. These measurements are very few in comparison with biographical charts generally and to be precise they are as follows: the height standing, and the seated height or better the height of the body, the weight, and the thoracic circumference. This for the body as regards the head, the maximum circumference of the head, and the two greatest diameters, the anterior-posterior, and the transverse.

After this I put the indices which are as I will explain relations between the measurements relating to the shape of the body, index of stature:— relation between weight and height, index of weight or ponderal index: — and as regards the shape of the head, the relation between the anterior-posterior diameter and the transverse diameter is the cephalic index.

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Finally I would like to determine something referring to the "ensemble" of the body and the head; omitting completely all the descriptive particulars about the shape of single organs, as for instance the shape of the ears, shape of the eyes, the shape of the nose, shape of the teeth, the color of the skin, etc.

But on the other hand I lay stress on the collecting of the data, which I believe fundamental; such as weight and height, and for this reason, I have not limited myself to giving directions for taking these measurements only once, but I offer a special schedule which may be a guide to the teacher, in the methodic and repeated collection of these measurements. And in particular, I would take the height every month, and the weight every week.

We will delay the method of using this biographical chart until later during the studies accomplished by the class when divided into the groups of which I spoke in the beginning.

As to details of the psychic examination there exists neither guide nor rote. I do not say "Examine the attention". I keep silent, I give complete 'cart blanche'. But I offer a part from the biographical chart what I call "the diary of individual psychology" consisting of a common block from which a sheet can be taken every day, and at the head of this sheet I have noted the date and the name of the child. I think the teacher who observes should hold this diary in her hand, and note down all the psychological observations which she thinks she ought to gather up on the various pupils, and having only one block she needs only to turn over a sheet for every child she observes. Later at night to avoid the annoyance of a preliminary resumé and the copying of the ob-

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servations taken during the day into a complex biographical chart. I suggest tearing off the sheets relating to each child and putting them between the sheets of the child's biographic charts. And as they are the data, afterwards, whoever so wishes, the teacher or anybody else will be able to gain an idea of the psychic development of the child.

Now to know how to make these psychological observations, I do not limit myself to a mere blank form but you will see that this is an integral part of the method of education itself. You well know, that the teacher, in our method is more of an observer than a teacher, therefore this is what the teacher must know; and that is how to observe.

You will say that I ought to give a guide for observation, but in this exactly consists my method. Given that the teacher must not teach, as soon as she has acquired the capacity of applying the method, she will have learned how to observe children, from a psychological standpoint. In fact, in a well-kept 'Casa dei Bambini' this is the only work a teacher can do.

A modern teacher, beside having this biographical chart handy should have a camera to take instantaneous photographs because at a certain point of the development of the class, when the children are working by themselves, come in by themselves, take their places by themselves, arrange the tables and get out the didactic materials all alone, when in a word they do everything by themselves then what else has the teacher to do, but to observe? And it is valuable that she should preserve her obser=

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ventions.

In this way the school environment becomes a scientific environment in which the teacher by means of the method constructs the science.

You may ask me why I have left the psychological researches unguided while I have given a guide for the anthropological investigation of the child. As I have already begun to make confessions to you I will say that while I believe in the real utility of anthropology in the study of the child, I do not have the same conviction, concerning the psychological examination, as it is taught by the modern dictators, of what is called "experimental psychology" applied to the study of the pupil, or scientific pedagogy.

That we can measure the body of a child is evident. The body exists quite visibly within its limits and its shape, which can certainly be measured: precisely; this shape is the mysterious biographical limit, of all living beings, and has such a definite character that we can tell, prophesying without difficulty after what point a being, a man, an animal, a microbe can grow. We know that the micro-organism of tuberculosis, is, one eighth of a millimeter long, and that the diplococcus influenza, is half a millimeter in length; that a man belonging to a definite race is about a meter and seventy centimeters tall, and that the woman of the same race, is in the average ten centimeters shorter; and we know also, that the child is about fifty centimeters long when born, and that at different ages he is bound to grow in such

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a definite way, and not in another.

Now these limits, and which are not only limits of bulk of which the height is an index, these limits refer to all the details of the body, which put together establish the form, and they repeat themselves, from generation to generation, so similar and so fixed as to give us the character of a definite race. And what is it that limits all living beings in this way? We may say it is a mystery; we can also say it is a characteristic of life. Certainly it is not something exterior, but it is an interior property of all living bodies, so much so, that living bodies grow by themselves, not because of any material superposition of masses, as it would be in an inorganic body, even if they have a form like crystals but because of an interior fact, and what they take from the exterior is not taken by superposition, but through the phenomenon of nutrition, which is neither directly in relation with the growth, nor with the changes of form during the growth.

Thus a baby, which is born fifteen centimeters long, and which has a special shape, which is not that of the adult, but has, for example, a very large head as compared with the body, and the torso very long in proportion to the lower limbs, which later are modified and acquire the dimensions and the perfections of form of a grown person, that special form which we love in human beauty, and which is no longer the shape of a newborn infant, for we know that the adult has a much smaller head, a different head and different proportions between the torso and the limbs.

This fact, which is a phenomenon, not only of growth, as

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we commonly say, but also a phenomenon of profound transformation, not only of the functioning of the organs, and the structure of tissues, but also of the external morphology, this fact happens ~~unaided~~ through a natural phenomenon, which we know how to help only from the exterior, first by nutrition, then by heat, etc., and with all these conditions of environment, which are called conditions of environment favorable to the development of life. This transformation is a biographical phenomenon.

And now, so that my lecture may seem logical, I ought to give the reasons for my personal lack of faith in psychology, and they are these : if we had had a vision, a scientifically demonstrated vision of a growth and of a known transformation in the psychic life of the individual which comes of itself ~~and is aided~~ by special psychic nutrition and conditions of environment favorable to this psychic development we would begin to get the conviction that we were face to face with analogous conditions of science and method. And therefore if we find it right to measure the body, we would also approve of measuring the psychic personality of the child. But as long as we are ignorant of all this, and as it is not even represented to us as something to be observed, before measuring, I do not enter at all into the field of measurement, but only into the field of methodic observation, which might help us to determine this principle, that in the psychic life, as in the physical life, there is a human growth, which can be helped by many conditions, first of all, by nutrition,

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which is nothing other than an absorption of matter from the surroundings, but it will grow by itself, and we can only follow the development as in all other biological phenomena.

As you know, I believe that there is a psychic organism, living as the body lives, with phenomena similar to those of the body, and by which the body is transformed; and I believe that in this school which I have founded will serve to follow the children and give to them these conditions, especially of nutrition, which in this case would be my method.

Now I admit that it may be useful for the present to measure only the body. I find it is right to follow this development, and the observation ought to be completely objective. This is in fact, the object of every positive science, to make every data on which we desire to construct a science as objective as possible. You know how fallacious human observation is and how the subjective fact almost always prevails. For example if you should ask a teacher: "Is this child well developed?" she would answer yes, or no, according as she had seen well developed children or not. A teacher living among poor children would call a well developed child, a medium developed one, and vice versa if used to children of the rich, she will probably do the contrary, or call a child developed who was not so or vice versa.

Therefore to, determine the data objective observation as near as possible to perfection, is necessary, in gathering these data and indeed measurements taken with special instruments are necessary to avoid all errors of estimate.

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And then we must learn to handle certain instruments, and how to measure. The most used instrument and the most important, the first in the order of the instruments needed for anthropological use, is as you know the Anthropometer or the man measure, the measure of height, and you know that this instrument is such a fundamental one that every scientist wanted to build his own anthropometer. So I also desired to seek a special anthropometer and had it made in Italy, because there were not any such instruments for children, (just as there was only furniture for adults) for it is well as far as possible to limit the instrument to the dimensions of the individual one generally wants to measure with it.

In our case the handling of the instrument presents difficulties which do not present themselves to the anthropologists studying the grown up men, because, beside the necessity of acquiring a certain ability in handling the instrument, and in reading the data, one has to know how to bring a little child to be measured. The best way is to measure somebody else, then the children will come of themselves, not only so but they finish by having such a passion for being measured that we will have to restrain this passion somewhat. Here then I cannot show what would happen in a common school, as I have to use subjects already used to it, and I cannot even answer with certainty for the results.

The child must naturally take off his shoes, otherwise he would appear taller than he is. You must put the child's heels near the vertical pole of the anthropometer, and the points of the

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feet divergent, the trunk must be touching the same pole. Attention must be given to the position of the head, this must be placed in position so that the extreme posterior point or the occiput, must touch the vertical pole, and in this case the eyes are absolutely horizontal. This is the right position of the head. To know how to arrange the child in this position, is a fact that has great importance in education, for example in the education of movements and also of the disposition of the other parts of the body; because we very seldom teach mankind to carry his head in that position which ought to be the normal, while the only position for the head in mankind is this one which we call normal position of the head.

Then we have this bar slide down until it touches the highest point of the child's head, which is called the vertex of the head. After this we ask the child to step aside.

The normal position of the head is certainly the most esthetic, the most favorable for giving the individual an expression of serenity and of strength. He who does not hold his head in this position, either holds it lowered, and looks as if he was humiliated, or too erect, and shows himself as a dreamy or ecstatic or overproud individual. In a word he would not be in the best condition in which a man can be, which in this case is also the most beautiful because his eyes look straight forward horizontally.

Observe the people you have around, for this is also a way of observing, and above all observe the children.

You will see that when a person in a vibrating moment of

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his normal interior life, for example in a moment in which an obstacle has been removed and he feels his own dignity, without being over proud, feels the joy of living still remaining in equilibrium, the head has that position naturally. Almost everybody has that normal position in that psychological moment, so much so that today we try to use this simple position, for saluting, for instance in the Roman schools children salute some one of importance who comes into their classroom, by artificially acquiring that position.

I do not only measure the total height, but also the height seated. I have always collected the two measures, the total height, and height of the torso, which is improperly called the seated height, because these two measurements together, give not only the index of the body's development, but also of its morphologic evolution: which tells us how much a child is developed at a certain age, and how that special transformation characteristic of the different proportions between the torso and the lower limbs is proceeding, because the normal development, I repeat, must be together a growth and a transformation. This transformation must proceed towards a model, just as the height proceeds towards a fixed limit and this model tends towards reaching a definite harmony of form, and therefore that, which we call beauty. The individual if normal will grow also in beauty, and he who grows abnormally, not only does not reach that definite limit, but also is far from attaining that finality of beauty, which would have been in his biologic destiny.

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A child growing abnormally, not only loses a part of his body during his growth, but also a part of his beauty, and if those two fundamental proportions evolve in harmony, we can deduct that the whole body is developing favorably. Something similar happens in the transformation of all the single parts of the body: and thus the whole aspect and physiognomy of the child, differs from the aspect and physiognomy of the adult.

After having taken those two measures, we must put them in relation to each other. This relation is called the index.

The relation which we make between two anthropologic datas, are always relations of percentage; that is, we must find out what is the percentage of the smaller measurement, if the larger is reduced to a hundred. This index which is a relation of measurements, when we have learned to understand it by practice, gives us at once the idea of form.

Now we will take the measures of this older girl. Her total height is 138 centimeters and the sitting one, 72 centimeters, placing them in proportion, in relation of percentage, we can say: if the large measure is 138 and the small 72, what will the small be if the large is reduced to a hundred? From this we get, with the usual method, the x , consisting in this case in multiplying, the averages and dividing them by the extreme which is known by us: $100 \times 72 : 138 = 52$

This 52 is evidently not a measurement but is a relation between measurements which in anthropologic language is called the index, and in this particular case is the index of height.

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To avoid always making this calculation the anthropologists have a general table to give the indices. And thus when we have to look for a relation between two measurements which we have collected ourselves, we only apply the forms of the index and make the calculation.
$$I = \frac{100 \times m \text{ (small measure)}}{N \text{ (big measure)}}$$

From one of these special tables I see that the index of the small boy is 58, and therefore in these tables there is nothing to do but to read the result as one would in a Pythagorical table, as we have on one side one of the measurements for example the small measures, and on the other the larger measurement and we can read the relation between those two, or the figure we are looking for just as if it was the result of a multiplication. For the height indices, we have these calculations already made. Now let us observe the two indices we have found, the indices of height of these two children are 52 for the larger and 57 for the smaller child. From these we can see that these two children are not only different because one is taller than the other, that the girl has not only grown but is transformed, as you can see from the relations between the two measurements. In fact the index of the girl is 52 and that of the boy is 57. If the height of the two children could be reduced to the same limit and we could call this limit one hundred, we could see that while the torso and head of the girl would be about the half of it, the torso and head of the small boy would be about six tenths, that is the body of the small boy, is much longer and his lower limbs much shorter. And if in this age the lower limbs are much shorter, what

does it mean?

It means that these extremities have to make a greater effort to grow, as we know that after a few years the torso has grown much less than the limbs. Therefore it is true that whilst these extremities are shorter, they have a much greater potentiality for growing than the body has, so much so that they transform the proportions of the body: and so the bones which are of hard substance, which to be able to grow must be to a certain extent soft, that is not very strong, because generally the part of the body which grows the most is the weakest.

Then we know that child cannot do what the adult does, not only on account of the different proportions of the body, but also because there is a different strength in the different parts of the body. Evidently small children do not have the powers of equilibrium of grown people and therefore it is quite natural that little children of this age, lie down on the ground, and that they should not have as their normal position, the standing or sitting position, because you know that to sit down we must have the lower limbs well developed, more especially if one must sit in a big easy chair. But if we ~~separate~~ ~~child~~ child must be seated and because he is small be seated in an uncomfortable chair or worse still that he must stand on his weak legs supporting the heavy weight of his torso or should we desire to hinder him from lying down only because we do not feel a desire to lie down then we commit an injustice constituting a real danger to the physical growth of the child.

Therefore if I say that small children can go to school

and begin their first school exercises lying down on the floor, I do not state something which interferes with the discipline of the adult, only because the man no longer cares to lie down like a child. And as there is a period in which man cannot walk and then one fine day he walks, not because we have hindered him from walking in the one case or have given him our golden example as people who walk in the other, but because his limbs have reached that point of development, which permit of his walking, so too then will also come a period in which the child will no longer care for lying down, and will prefer to sit or stand. There are inclinations to assume different positions, according to the shape of our body, which ought to be repeated in children as well as in adults. But we see that we respect everything in adults. We let a person with short limbs move gracefully, and one with long limbs have majestic movements, and why do we not allow the child to lie down as he likes, so much the more that it is a universal law, a physiological law, and we know that this tendency will be corrected in time? The child needs to exercise his legs, because they must grow; but not as we would exercise them, because if he would do as we do in walking the excessive weight of his body would bend his weak legs. So he loves to exercise his legs freely, lying down and kicking, in the well known way children do.

It is easy to command: Keep standing! Do not do this! It is not with a command that we can proceed, but with a scientific observation, to help the normal growth of the infant. This is why I propose to leave the child free, and not only do I give as school furniture the carpets and mats, but I also suggest some special gymnastic apparatus which I described in my book, and which allow of the exercise of the lower limbs without the necessity of the standing position.

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LESSON IV.

F R E E D O M .

I have several times, in the brief course of the lessons given so far, hinted at the way of setting about an experiment which permits us to observe the human being in the same way as the other experimental sciences allow us to do when their aim is the study of living things; I concluded that these conditions, which are conditions of a real experiment, and hence conditions of observation, are two: an environment which permits of the realization of the most perfect conditions of life and freedom which permits that life to expand.

Thus we must consider the conditions favorable to life and to freedom. We have said that in the 'Casa dei Bambini' precisely this is established: conditions favorable to child's life, and freedom in the manifestations of life of the child himself.

In the meantime I should like to give a summary of what I mean by freedom, as applied to pedagogy, freedom for life to expand, to unfold following the dictates of nature. Now this freedom which I would give to life for its development includes all conditions favorable to life, because

~~In order that life may unfold itself~~ it must be in conditions favorable to its development. Thus with the life of a child, in order that it may develop in the best possible way, it must for example be given the best possible conditions as regards nutrition, respiration, movement, etc. But in this case what are these conditions favorable to the physical life if not those conditions necessary so that the physical life may develop freely? Thus we can say that with these conditions of physical life we make it possible for the body of the child to develop freely, that is to say we give it a condition of liberty. In fact the body which during its period of development is placed in these conditions can attain to its biological destiny, as for example the growth of the body to that definite stature which is natural to the race to which the individual belongs; and this harmonious development of form these transformations through which the adult's body reaches definite outlines and which taken together we consider as the beauty of the human form.

Thus these physical conditions of freedom permit the child's body to attain freely to the destiny which relates to growth and to the development of the body, and to the attaining of beauty. In this case we use the phrase 'conditions favorable to life' instead of the single word 'freedom' because it makes our meaning clearer, but not because there is an essential difference between the two things. We understand better because we are accustomed to analyse these conditions and because we know them to be not only the conditions in which life in process of development exists but as the conditions necessary in order that life may develop in the environment.

The first group of conditions has been revealed to us by science

"human physiology" and the second, which regards the environment has been described by hygiene. Thus it is science, an accurate already established science which allows in this case to determine all that relates to the physical liberty of the child. It cannot of course be said, that it is science, or the result of science, such as hygiene in its application to physiology, which gives the possibility of development to the body because this possibility is inherent in the child body. So true is this that the savages who have not the aid of this science, but been really able to enjoy complete physical liberty, are much better developed and more robust than we are.

Indeed it might be said that analysing the dictates of hygiene we find an invitation to a series of liberations: hygiene only shows us the dictates of freedom, and points out to us in these dictates a physical life which is better developed among the peoples who do not live in the bonds of civilization in which we live. Hygiene undoubtedly carries us back to nature; when it determines the limits of feeling, it simplifies them as compared to what the food of civilized humanity was before the dictates of hygiene were heard, it simplifies them and takes them back also to the direct use of living food. For example when hygiene pointed out as a more nutritive substance that which was still living, freshly gathered fruit, eggs, fresh meat, etc. it indicates food very similar to that of the peoples who live in a more natural state. Then it invites us to come more in contact with the fresh air, to rid ourselves of all prejudices, to exercise ourselves freely, to come more in contact with water, and in general with all the physical elements, when it points out how we ought to modify our clothing so that all the organs of our bodies may function freely; it breaks

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many bonds of slavery imposed on us by civilization.

It does not create anything, it only allows us to return to nature. It is not hygiene which renders us robust it is the freedom which hygiene gives which makes us healthy. In fact hygiene has not a direct action on our vital organs, for example: it does not direct how the heart should beat, nor has it an influence on the inner functioning of the organs; nor has it as regards the growth any direct influence on the skeleton, it is not hygiene which by force of pulling lengthens the child, nor is it indeed hygiene which makes the lungs move in respiration. However today there is really a chapter of hygiene applied to the school which is directed towards influencing the respiratory movement, respiratory gymnastics; these have been shown to be needful for the scholars, so that the respiratory rhythm may be set in order and the inspirations which were too superficial in the average made more complete. So superficial were these inspirations, that as a final physiological conclusion came a diminution of the respiratory acts, and as a morphological conclusion a diminution of the thoracic perimeter and in general, in the development of the chest. So much so, that -- as you perhaps know, although it is said that our race is the sister of the Greek race, it is however doubtful owing to the fact that the thoracic development of the Greeks was notably greater than the thoracic development which we today possess, we, a race of Latin civilization.

But this action directed to the development of the lungs is very like the help which is given to the asphyxiated who have absolutely lost the power of breathing and whose lungs must be helped materially in their natural movement for taking respiration. Thus it is no longer hygiene

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but a prompt help for humanity which was about to succumb to a species of asphyxiation. This ready succor is found necessary for the children in the schools, a thing which we do not wonder at if we reflect that the children are obliged to live in surroundings so accurately measured that one speaks of the curvature of the schoolrooms. What does the curvature of the schoolrooms mean? Give the children just so much air, neither more nor less as will be needful to save them from being poisoned. They then must remain motionless and oppressed by weariness - this depression of weariness so diminishes the action of the heart and lungs that the respiratory movements become weakened.

Here then we may contemplate a humanity in its infancy which is condemned to physical conditions which can no longer be called erroneous but dangerous to life, so much so that not hygiene but outside aid becomes necessary to save it. Thus I exclude this action which would really seem a direct action of hygiene on an organ for it is undoubtedly clear that the individual who lives in a natural state without respiratory gymnastics, by the single fact of his being free will find much more efficacious means of dilating his lungs, in running, in jumping, in moving about, in horseback riding, in wrestling, etc.

Thus I should like to conclude this first part regarding freedom in relation to the critical development of the body by saying that the greatest hope which science can give on this question, is in revealing the bonds and in freeing from everything which hinders life in its development; and the dictates of science are; not direct actions but in reality helps in this development, that is the aid given by science is an indirect aid and it is life which causes the development, and not the science-

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tific aid which is responsible for the development.

Now in the same way we may indicate intellectual liberty which is liberty of the inner life of man. There ought to be the possibility of a spontaneous development, which should attain to definite end, undoubtedly analogous to the ultimate end attained to in the development of the body, this end being to grow and to attain to certain definite proportions of beauty; so undoubtedly here the inner life also has the definite goal of growing greater and of perfecting itself.

Now if there is to be scientific aid to help man in his life, this scientific help must be analogous to the hygienic help to the bodily life — it must reveal the bonds and then break them. If the body, which being material and more resistant to an action coming from outside, can be brought into a state of degeneracy through a form of slavery how much more so the inner life. Undoubtedly the child who cannot grow up healthily, cannot grow up in a natural way either as regards his intellect, his character or his inner life. And the method which we can use to influence the growth of this inner life, will represent a sort of Hygiene which indirectly and not in any direct way will try to help this development. Thus for example we ought not to develop the memory in any special way, nor should we specially develop the imagination or the character or the enthusiasm, just as we cannot modify the heart's action and cause the blood to flow, nor elongate the skeleton, nor make the lungs breathe in any special way; but we must so act that all may develop in liberty. Now this freedom of the inner life includes the entire freedom of the physical life. Up to a certain point freedom of the physical life may be had without the freedom of the inner life, although even the physical life is influenced by the inner life; but there cannot be absolute inner freedom

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inner life, but there cannot be absolute inner freedom if conditions of freedom for the physical life are not united also, so that mounting to this higher step, the lower step is included.

In fact we cannot imagine for example that an underfed child, a child who breathes poisonous gas, who is constrained to inactivity, can develop in the best possible way intellectually, and as to his spiritual life. Also in social life we see the same facts in order that man may rise to greater heights interiorly, every material preoccupation must be dissipated; in order that the spirit may arise higher material preoccupation must not assail it; the spirit must be freed of these material preoccupations in order to succeed in perfecting itself. Now when we make the functions of the body imperceptible we free a man from thought about these functions. The attainment of perfect physical health renders it possible for us to forget that we have a body, whereas a sick man, who is suffering physically, the man who is hungry can never forget it.

To provide perfectly for the physical health is however to free the psychic life really only in this way. In fact Christ who undoubtedly is a teacher of freedom for the spiritual life, points to ^{two} special paths by which to gain the road leading to the elevation of the inner life: one is charity which imposes upon all men the duty of helping other men in their material lives so that they have no material anxieties; the other applies only to rare individuals and is the abnegation of self, or the possibility of forgetting one's self. There are two ways of forgetting one's self: one is not to subjugate one's own personality and the other is the desire to subjugate it; in any case, in one way or the other, this is the road for an attaining to an elevation of spirit.

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Thus it may be said that it is a question of freedom as a whole and it is not necessary to speak of conditions of life, suffice it to say of freedom, "Freedom is a complete whole; the free man has entire freedom. Man may be wholly or partially free, but his freedom is a complete whole as he has one complete personality. Therefore it is maintained that this is the fundamental condition of freedom, and we can aim at a particular point of freedom in the mass, freedom as regards the special characteristic of man which is that of creating.

When we say that we wish to place the children in such conditions of freedom that their inner creative forces may be free to develop, we have said all. For this includes every other inner form of freedom. Thus for example if we say in regard to a living creature, that it has its own life work, if for instance we were to speak of the bees when we wish to place in such conditions of life that they can construct the hive and the honey in the best possible way, we include in this idea that each bee may attain to the best conditions for its individual life. And thus if we are speaking of foraminifera wishing to place foraminifera in the best conditions for producing coral, surely we include in this the fact that each foraminifer must first be in the best condition of existence, for only when it is in its best conditions of existence can it produce that which nature formed it to produce.

And thus if we wish to lead man to that state of freedom which permits him as an intelligent, intellectual spiritual, magnificent human being to make discoveries to create the perfection of human environment which it is characteristic for him to do. Undoubtedly we include in this that man may attain in the best possible way to all the ultimate ends of

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his existence.

Now there are many prejudices about freedom, prejudices which are founded on a lack of faith in the inner power in the man who creates; in this form of inner life which of itself develops and produces; and even this lack of faith is obscured by shadows of prejudice; it is believed for example that liberty is disorder, also it is thought that movement is disorder; it is thought that order is inseparable from two other ideas, the idea of slavery and the idea of immobility. Now the concept of freedom must be stripped of these prejudices and freedom must not be given a definite shape which restricts it within limits not its own.

We say that living beings are free when they can develop in the best way and grow in the most perfect manner; but since living beings are all different one from the other, we must conclude that each being or group of beings must have its own special laws of freedom. Thus for example we can say with the biological concept of liberty, that a tree is free when it can tranquilly develop in suitable ground, suitable as concerns the nutritive substances to be found in the ground itself and adapted to the atmospheric conditions, etc.; but undoubtedly this tree when it is free is in certain definite conditions which are peculiar to its species, for instance, that of having its roots well sunk in the earth, so that the tree remains motionless, and in this way it is free to develop itself in the best possible way. So true is it that the first thing the seed does it to put forth roots.

If there was a prejudice, if for example to be free meant to move, to free a tree, would be to uproot it. Evidently this would be to give death and not life to it.

We say that a bird is free when it can fly and make its nest where it wishes. Undoubtedly its conditions of life are very different from those of a tree; but if there was a prejudice that to liberate the bird it ought to be thrust into the smallest possible cage so that it should not move, we should not be putting this bird in conditions of liberty but quite the contrary, since every living thing has its own form of liberty.

The same may be said of every object, of every creature even of inanimate objects; of every created thing. For instance the surface of the earth, we can say that is free when it lies so that the plants germinate, living beings live tranquilly on it, and men build on it; thus for the earth a condition of liberty is to be absolutely immobile, for if instead the earth moves there is an earthquake and destruction.

We say that the sea is free when its billows in continuous motion follow one another, but the sea too has limits which it does not exceed. And yet though it has limits it exists and is free, and these limits are such that however immense the sea may be, a little bird may chirp, a little child play beside its calm billows well knowing that this enormous mass does not go a meter further. If we wanted to free the sea and said to it, "Be as calm as a lake!" as the surface of the earth! and invade the earth!" This would be a convulsion which would destroy the very characteristics natural to the existence of the sea and they would be no longer characteristic of freedom.

We believe that the stars which shine in space are free, thus the stars seem to us the symbol of liberty because they have all space around them and it seems to us that the idea of space is equal

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of freedom, and because they shine the light seems to us so great a sign of glory as to be a coronation of freedom. But these stars have eternally the same orbit from which they cannot deviate in the slightest degree for deviation would mean destruction.

Thus we say that freedom is so understood is a freedom founded on absolute limits and on absolute laws; and that without laws not only does freedom not exist but even the forces of nature do not exist. The road of freedom then merges into the road of discipline from the fact that freedom is absolute obedience to law; though these laws are not the arbitrary dictates of any man but are laws of the universe.

It may be said of man that free man is not the man without any laws, he is, the man who has but one law: the law which animates all created beings. Whatever law is outside this is slavery, (restriction of life, impoverishment, the road of death) and that if this law does not include ⁱⁿ with it discipline, has not within it this inner control, it is rebellion, disaster and destruction.

Then in this general idea we can become to some extent acquainted with characteristics which we recognise as those of freedom; one of these characteristics is that life develops vigorously (speaking of living beings) because united with these conditions of freedom is the utilization in the best possible way of all the latent forces, and the results are evident and whilst this is happening, a method of discipline must be clearly seen which develops contemporaneously, not only so, but what is the same thing, the way to freedom is through freedom.

And what is the impression we have when all this is attained? It may be said that humanity attaining to this and coming obediently to that

harmony which renders it free, is full of joy. However much this fact may be limited to a characteristic peculiar to humanity, we know by analogy that there may be also something similar among the other beings and among the creatures in general. We can say that the stars seem to us to be full of joy when they shine. there is also in the holy books this phrase which refers to creation " He called the stars. They said Behold us and shone with joy." Certainly the plants in bloom, the trees luxuriant with verdure, the birds who fly warbling, the bees who are making honey seem to us in an ecstasy of joy.

It may be said that joy is a universal sign of harmony, and by this we may know if we are on the road of freedom, for instance in regard to man whom we are desiring to educate. If in the 'Casa dei Bombini' for example there is really an advance along the line of freedom there ought to be the same characteristics, a form of life developing vigorously, a discipline born of itself an unrestrainable joy which is a tangible sign for us that we really are going along the direct road.

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LESSON V.

One of the reasons I have limited the number of measurements (to be taken) on my biographical chart is to permit of the repetition of the same measurements. In fact the thing which is important in the observation of the child from the point of view of his physical development is to follow his growth; we cannot choose an instant of infant life with perfect understanding of his personality; not a moment but the development of life is what is important for us. The life of the child is nothing but a rapid transformation and it is this transformation which is important.

The fact of limiting the number of the measurements permits of following this development and compels us to a choice, the choice naturally of the most important measurements. The choice of the most important measurements according to some anthropologists should be based on the head; for they say the children must study and hence the intellect is the most important thing and therefore their heads which contain the organs of intellect are of the greatest importance to measure.

That great importance is given by anthropologists to craniology; whilst I believe that the scope of pedagogy is that of following the

whole body of the child, seeing his entire physical development must be followed and also because in observing the development of the intellect we can better follow his psychic development.

But when we wish to make physical observations why give special attention to the organ which only has some relation to the development of the intellect, when we can directly follow the intellect? It is the whole body which concerns us.

For this reason I have, as I said, chosen a few measurements; the height, the thoracic perimeter, the weight and indeed the body as a whole. Following the physical development of the child in this way, doubtless it is important from the point of view of diagnosis so as to know if the child is developing well and also developing in accordance with his age. But it may have also a purely scientific aim that is to say as a contribution of researches to science.

If we are taking a child's measurements we must know how to judge of them. How could we possess judgment in regard to the measurements if science had not fixed certain limits? So it is; if, for example, we are measuring a child and have obtained therefrom a certain figure, what can this figure tell us if we do not know with which figure the child ought to correspond at that moment? It is not sufficient to know how to obtain anthropological data but we must also know how to compare it with other data and to judge of it.

It must for this purpose be compared with the normal averages which are given by authorities on these subjects. These normal averages since their study no matter how widespread is not yet very definitely established, these averages are not yet absolute so it happens that each

one of us when we take methodical measures can give a contribution to Science towards the establishment of these averages to which we must turn for reference. You probably know these things, you have seen them in all institutions, however this repetition is necessary for the sake of order.

We give a single measurement for the height of a man belonging to a definite race; thus for example we say that in the Latin races the average height of the race is for the male 1.66 meters, for the female 1.55 meters; for man we give a single measurement but for the child many measurements are necessary.

Thus the anthropological data of the adult may be said to be a point whilst that of the child is a long line. This is why anthropological researches on the child ought also to be a line and not a point, instead the anthropological forms of the schools today, tend towards rigorously following the methods of general anthropology and towards using a point instead of a line in the study of the child.

Now the line is more important than a single measurement, than the point, in all the possible measurements of the child's body.

What I call the line is the relation between the average measurements of height at all ages. We have in this the determination of definite facts and as we contemplate the summary of these figures, we have also a law, the law of growth.

If we wish to represent the increase of stature by a diagram, we must begin with a line which will ascend rapidly, for in the first years of life and especially in the first years of our life, growth is very rapid; this growth then continues but in a lesser degree during the

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period preceding puberty, that is to say there is a period of rest in the growth before a period of great work for the organism. And this rest period occurs between the ages of ten to twelve or between the ages of nine and eleven according to the race. Then comes another period of rapid growth, the period of puberty. Another period follows in which the growth is less and less until the age of eighteen years - then the growth becomes almost imperceptible from year to year until the twenty-fifth year, and at the twenty-fifth year it stops (the organism in evolution attains rest) it remains the same up to the period of involution, then the height decreases slightly.

Now this law is important, not as a curious fact but as a biological fact which relates to the physical properties of life, to physiology. It is sufficient to think of the period of puberty to understand that this law has a physiological counterpart.

But what I would like to have noted in this case is not the necessity of our studying physiology in relation to morphology; I should instead like to make a relation between this phenomenon of growth which is an individual phenomenon, however much in the average; and another phenomenon which is looked on as a biological phenomenon, as a social phenomenon and it is that of mortality, of the general mortality.

Lepsius has made a diagram of the general mortality and has noted that mortality is highest in the first and second years of life; then the mortality decreases greatly, and reaches a minimum in the period preceding puberty; then the mortality rises again in the period of puberty and decreases until about the eighteenth year, that is to say then rises a little after the eighteenth year; remains almost stationary until about

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the fortieth year after which it decreases.

The relation which exists between the line of mortality and that of growth may be summed up in three when the organism is in a period of great labor, the mortality is highest in the first years of life, it is very high in the period before puberty and in the years which follow puberty and diminishes in the period of physical repose.

Evidently these facts are of the greatest importance to us, because we know that there are periods in which the organism does the hardest work, when the organism has to make progress it is subject to diseases, it needs a special hygiene. And if by chance in this epoch man is placed under scientific observation, as an individual in school ought to be then our duty is to protect the life of humanity.

This which ought to be the most outstanding affirmation the simplest among the observations, has not however today entered as a guiding motive into the organization of schools, of progress, etc. We without in the least observing the organism, consider only whether the child has passed his examinations or not, whether he studies or not, whether or not he makes progress; if death comes as a culmination that is an episode.

It may be noticed that the statistics, when it is stated that some one dies, we may know that a great number of people are sick as compared to the one who is dead; so that when there is a high mortality in relation to an age that is to say there is a still higher mortality (percentage of sickness) in relation to this same age and certainly when the mortality and percentage of sickness are high this fact indicates very poor conditions in all the individuals even among those who are not

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sick. This is an indication which strikes a few, but concerns all.

This period of attained development which is a period of rest as concerns the growth is the period of greatest production of man as a worker. There is evidently always the physiological labor insofar as the body functions; but you see how in the child besides the physiological labor common to all mankind there is another labor, powerful and immense which is that of the transformation of the organism, which is of course a function also but of quite another kind. We ought then to distinguish very clearly between the laws which govern man before and after the attainment of his biological destiny.

This period of rest is also the period favorable to reproduction, over and above that of social labor. And it is noticeable that all children born before this period are less robust than the children born after this period who are also much more intelligent and stronger in their whole personality. There is illustrating this an interesting study concerning men of genius, by which it is seen that all men of genius are born in this period, and that many of them had numerous brothers born before them whose intellects were not above the average normal standard. Thus it is known that Victor Hugo was one of the last born in a large family of children.

Now in taking the measurements of the height of a child we must compare it with the average measurements which the authorities give, these averages are an index for us as a guide; but not a dogma. They are not the absolute, they are not a sort of Omnipotence which has said to man, "This is the limit of thy height at this given age." No, indeed, for later averages from the successive contributions of investigators are

always being made.

This is why I said that from the scientific point of view, the evermore widespread researches are moving towards an exact definition of these average limits which a problem science is in process of solving. you can call them limits, since they are limits which must contain the absolute to which science is drawing nearer as to a mathematical limit as to a biological limit. This limit finds a parallel in the mathematical limit which may be approached but never attained. But what do these averages gain from the contributions of the investigators? -Exactness and the probability that these figures represent the absolute average.

The fact that this is not the absolute average should make us seriously consider the relations between the individual and these averages as to whether they are normal relations or otherwise. That is to say if a child is outside these averages we cannot therefore say that he is abnormal, so much the more since these figures are averages and as you know, in speaking of averages it is understood that averages are in the nature of an axle-shaft between varying measurements. However I think we will come back to the question of averages.

Then another thing necessary to possess is this table of the growth of stature; clearly if we are amongst various races, each one must have the average of his own race. And the line of growth has a greater or lesser rapidity in its development but it is a continuous line. This fact of the regularity of growth which is a sign of normality is also a law. Life is always subject to limits and absolute laws, so that when it moves it moves with order in an orderly way.

The growth of stature in children is here in this diagram repre-

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sorted by a black line underneath this black line there, is another red line which goes zigzagging sometimes above and sometimes below the other line: It too represents the growth of stature of the child but it is the growth of the child as surpassing the law. This is character: It cannot be said that this child is undersized or overgrown, in some years he may be undersized and in others overgrown. For example at eleven years of age he is tall for his age, at twelve his height is less than the average.

Then we notice those people who are beyond the law; these are the degenerates, ~~the deficient children~~ abnormal. This single line will show as the fact that some human beings born in a certain irregular way are outside the law. Certain scientists have said; they lose heredity; but heredity is the law of life. They are the individuals who will in all probability pass outside the civil law. Discipline physical and psychic is an impossibility for them, they are those who would be approached from without and guided from without in contradiction to those having the inner law, developed naturally in an orderly manner.

It is well to analyse these measurements of growth; that is to say to repeatedly take the same measurements. And I place in my biographical chart tables which should help in the monthly collection of data as to the height of the children. To facilitate this task, in a class say of forty or fifty children, I have the day of every child's birth in relation to the month on one side, the second, the third or the fourth of the month for example; and since a month has about thirty days it can be seen that with forty children dividing them according to the day of their birth there would be several children to measure every day, and thus it

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is possible to do this provided that there exists the order I have mentioned. So even the children will come to the point of measuring themselves and then each one of the children can be led to observe himself, to remember certain work to be accomplished, to remember the day of his own birth not from vanity or so as to have presents, but because this is the day for him to observe himself.

In taking these measurements (as always when something exact, something methodically scientific is to be accomplished) it is done in order.

Thus it is discovered the growth is not the same every month, or in all seasons, but that in certain months and in certain seasons the growth is greater and in others less. The growth is greater during the hot months than during the cold ones. For example, in the "Casa dei Bambini" it has been noted that our little children of four or five years old grow about four millimeters in the winter months and eight millimeters in the summer months. There are authorities who report a difference by seasons however not by months — of a centimeter and a half or two centimeters according to age, one and a half centimeters at ten years two and a half centimeters at thirteen to fourteen years.

If this is valuable it is on account of the fact that when growth is greatest, strength is least: here we have a kind of explanation of why during the heat the children cannot work so well — their organism is growing more and therefore it is right to give summer holidays.

I do not have only the standing height taken but also the seated height at the same time, and then I obtain the weight, this however no longer once a month but once a week.

It would be very advisable to take the children's weight every day. Hygienists advise even adults to weigh themselves every day, and there are adults who have scales beside their beds by means of which they anxiously follow the course of their own health, so anxiously indeed that they even lose their own health. But with children it may be otherwise. An exercise repeated daily is so much their habit that their weight could be taken every day. However it ought to be taken at least once a week.

To take the children's weight every day is not a useless thing, it does not have a purely scientific aim but an eminently practical one, since as you know this weight is an index to the child's health. Again the weight is the only varying anthropological measurement. As you see the height cannot vary, for it cannot be longer one day and shorter the next, for the skeleton once it has grown to its definite limits is permanent, at least if it is not deformed, but certainly if it is deformed it does not go back to the dimensions and shape it at first had.

Nothing you can think of grows and decreases since everything has a shape which in general is attached to a skeleton. Instead weight depends upon the fleshy and muscular parts of the body which can grow and then diminish. As weight is of great importance since by it we can actually follow the child's state of health. If the child's weight lessens, evidently we should come to his aid for some error exists in his physiological life.

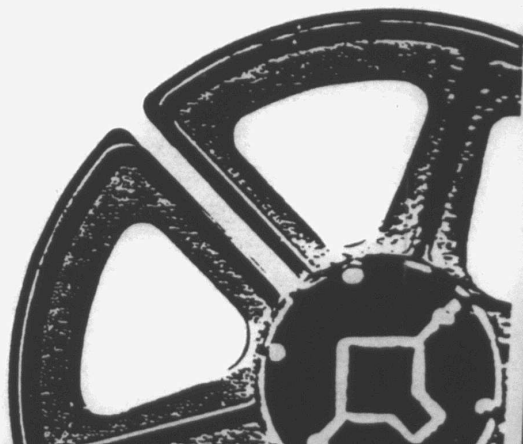
But there are differences in weight which have a special pathological significance. Very interesting investigations have been made on the period of incubation of infectious diseases. Now, it is known that





C 469

Incomplete lecture.



MARIA MONTESSORI

MONTESSORI TRAINING COURSE

LECTURE 6

1913

C470

(No. Renewal)

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LESSON VI.

That freedom should be the basis of pedagogy is certainly no new thought; one may say that this has been the fundamental principle of all pedagogists and is the ever recurring idea gathered from the experiments of experimental psychology, which is drawn not from the concept of an author, but from human nature itself. And, as is often the case, intuition has come before experience and great minds have intuitively felt the truths which afterwards experimental sciences have obtained from life itself.

The principle has existed, but it has not been put into practice. For example, the theory of J.J. Rousseau, par excellence the theory of liberty, is only one idea which forms part of the history of the philosophical ideas of humanity, nor was Tolstoi's idea of liberty, which they sought to put into practice, ever actually put into effect.

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There is still a great void in this problem of education based on liberty, because practice itself is lacking; this is so true that even today there are such strange concepts of freedom in the practice of the same, that, at first glance it would seem that liberty led to the ruin of mankind, of society, to the distraction of education, a proof that we understand freedom for man as we might understand freedom for nature were we to practice that liberty for example by uprooting trees, by causing an earthquake, by having the ocean cover the earth as in the glacial period, or bringing to pass that the stars collide one with the other so that the end of the world would be upon us. This is not the meaning of freedom, on the contrary, liberty in nature is order,— the result of absolute obedience to the laws of creation which bring about harmony and discipline, an idea difficult to put into practice, for what are the ways leading to the freedom of man?

Physical freedom is not sufficient since man does not live only in open air like a plant; nor is the freedom of movement which suffices an animal, enough for man. And should we wish to grant man a free choice of what he desires intellectually, how can we say he is free in his selection if he has no knowledge of his needs? And if we desire man to be free in his choice of action how can we say he is free if experience has not first taught him?

What then is freedom?

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dom of man into actual practice? What I should like to do to-day would be to begin veneration of that which we have accomplished in practice along the line of this principle of freedom as understood in the theoretic sense and which I sought to develop in the last lesson.

Now, to place individuals in the best physical conditions and to give them the environment most favorable to their physical development, this is certainly the first step. But what are these most favorable conditions?

We have so many prejudices on this subject that we know that even people of the privileged classes are tending toward degeneracy; if we imagined that the school which can give children —small children— the best physical environment is the very wealthy school, we would miss the mark.

Now, one of the conditions most favorable to the environment of a school for little children was made clear to us in the formation of the 'Casa dei Bambini', namely, that the school be in the home so that the child may be saved the separation from his family and the sudden change to entirely different surroundings. Having the 'Casa dei Bambini' in the same building as his home, certainly gives an environment permitting such a freedom of feeling, of tranquillity, of peace of mind as to allow of the child's gradually adapting himself to this scholastic atmosphere

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so that afterwards he can ~~be~~^{be} home without this feeling of strangeness.

Hence simply furnished room within the building is, obviously, the school which affords the environment most favorable to a child's existence, much more so than a fine school far from home.

It is space, without a doubt, that is necessary, not rich surroundings. And so it may be said that the form of our schools is one well adapted to carry out the principle of freedom.

One very simple idea is that children be able to move about, and in order that they move around, clearly, space is needed; now this space should not be merely that required by the desks, chairs and tables, but aside from this there should be open floor space— so that the children may move about easily; and a good substitute for desks are tables and chairs which are movable and allow the child to change his place. These are furnishings adapted to the idea.

You know, however, that we try to give the children not just one room, but if possible an apartment with a garden so that they may have a large room to work in, a dressing-room, etc., they may pass freely from one room to another.

And since children are not idle but busy, they are free to choose their work; that is they may select the material they most desire, or the kind of work which most ap-

poels to them, for example, they can exercise themselves in the education of their senses or in what we call the tasks of practical life; washing and dressing themselves. Now all this gives only a purely external idea. If we were to think that we had attained the principle of liberty with so little then there would be just cause for ridiculing this school of freedom since other schools have already accomplished much the same things, thought this accomplishment may have been only a tentative action not closely correlated to a method of education.

Aside from this, which gives a picture such as a cinemetograph might portray, there is another and more profound means of realization which really begins to bring out the difference between our school and others already in existence; and that is to free the child from the constant external influence of one who wishes to instruct him. To free the child of the teacher, this is a second step of great import in the acquisition of freedom. If the principle of freedom is absolute obedience to the creative laws, if this is so how can we say that children who must grow up under the constant outward influence of some person, are free, in the deep sense of the word, when in this sense man does not create the inner man? If liberty is truly that freedom from the influence of man and a dependence on the bond which has the greatest influence upon creation,

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how can this be true? Therefore to give a child liberty we must free him from the direct influence of man in order that he may be spontaneously free as regards the laws of his inner nature.

How could we ever conceive of freedom of thought among a people brought up in a condition of slavery so severe that their intelligence was moulded like plastic clay by an intellect born in times previous to those in which the new mind must develop. One of the forms of slavery most felt by humanity and one of the greatest victories of civilization was precisely this, to free us from the influence of another's mind and spirit over our minds and spirits.

What were the despotic kings of the darkest days of the middle ages if not something similar to our schoolmasters? They obliged men to think as they thought, to act without liberty of conscience as they wished them to act. The people must always say that the tyrant was in the right and must consider true what he asserted as true and he who did not believe this was a rebel; in like manner the pupils of today are in such a state of subjection that they have not even this sensation, possessed however by the people who through rebellion gained their liberty, this feeling that their intellect is oppressed; naturally and with the weakness of their years they submit to their teacher.

The highest virtue of people subject to tyrants was

their loyalty to their king; the highest virtue of a pupil is obedience to his teacher. He who wished for power became the courtier; the pupil who desires to succeed is, be it unconsciously, the teacher's courtier; he adapts himself in the most perfect way to the spirit of the teacher.

And if we consider that we took a great step forward in our idea of civilization when we freed ourselves from this, the most oppressive form of slavery, how can we conceive of developing the children by allowing them to grow up under this tyrannical school regime? This, then is another principle: to free the child from the school-master.

But allowing the children to move around, to choose their work, to go from room to room without a teacher permitting this, what would we seem to obtain other than the greatest disorder?

Hence there is something else which assists in obtaining education upon this basis of liberty, something which includes both instruction and discipline. In order that children may live in these conditions of freedom they must find a way of busying themselves in a manner adequate the needs of the unfolding of their inner life. This is the pivotal point of the whole method: namely, to offer the child work, not just any kind, but that work which at that particular moment is the one thing necessary for the development of his inner self.

Well then, in what does this method consist? In the organization of the work; to find material adapted to



the needs of the child and to know how to present it to his spontaneous activity.

In fact in our schools there is a noticeable wealth of didactic material which, as is well known, allows the children to educate themselves; that is, brings it to pass that a child using this didactic material develops his intellect and his inner life. So an object takes the place of the teacher; in fact, a great number of objects, such quantity and quality as is necessary and sufficient to accomplish the aim.

The qualifications of this liberty can be summarized thus: to furnish ^{the} conditions most favorable to physical development; to give an environment which will allow the child to express himself spontaneously; to free the child from the master who teaches; to give such material as is necessary and sufficient for auto-education.

But all these are merely the external conditions of liberty, the visible qualities, the means. When, for example, we say that the best conditions for physical liberty are those relating to nutrition and respiration, it is well known that we mean that these conditions, which hygiene dictates and describes, facilitate the development of the body, the organs and the tissues; they grant that freedom of transformation which is a vital part of metabolism. The nutritive substance and oxygen combined serve to transform common food into living substance; the food

is changed into blood and the blood into live organism, into muscles and glands. It is this organic activity which, from a physiological standpoint, is the distinguishing characteristic of human beings, this is what produces and maintains life.

~~Thus we may say that organic freedom does not consist~~ only in finding food and oxygen, but in being able to accomplish this inner labor in the best possible manner, a mysterious labor the workings of which we cannot follow, and it is already a scientific privilege to know of its existence, which, however, is made manifest to us by three external facts, for example, the exuberance of life, the coloring of the skin, the brightness of the eyes. We view the phenomenon of growth as an external manifestation of the one vital fact of liberty, the freedom of metabolism in its vital work the lack of which causes denutrition, poisoning and a tendency to diseases. Disease itself is the growth of the body outside the limit of its natural physiological activity, thus rendering the body incapable of attaining the goal of life.

We must also understand spiritual liberty in this sense and know how to observe it. We cannot say that in giving the didactic material and in permitting auto-education, that we have given freedom, no, we have only given the means of attaining freedom. What we must know how to observe and follow is instead this inner, personal phenomenon of liberty

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which springs forth only under these conditions and which, if we are to observe it and guide it, we must needs recognize from the beginning. Now, that freedom manifests itself in this ultimate way at a moment in which a spontaneous labor is taking place, a labor which will later expand, this is a fact which up to now we have not been accustomed to observe in the schools and of which no mention is made in the treatise on child psychology; though something similar is hinted in Edward Seguin's Pedagogical treatise on the education of the deficient. Seguin gives an illustration which I think very touching and appropriate.

He was the educator of the deficient child of a wealthy and aristocratic Parisian family. In this family's palace were halls hung with ancestral portraits. This boy was incapable of any form of concentration or of voluntary act tending to a definite end. Seguin sought in many ways to provoke one such act in this child and was teaching him target shooting. All of a sudden the child took an interest in this and shot at the pictures of his ancestors. This certainly not only ruined the works of art, but destroyed treasured heir-looms and when the child's father appeared on the scene he was angry with this weak teacher who allowed the child to do such damage, a thing he had never done before. Then Seguin wishing to demonstrate to this father his misfortune in having an idiot child and the magnitude of this act said, "This is your son's first intelligent action, the first

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~~voluntary act of a man who only at this moment shows that he~~
has an aim; this is the beginning of his inner life; what
matters it if it costs you your ancestral portraits? No price
is too dear to pay for so wonderful an act of the human mind."

We might say, if so small was the price of a spark
kindled in the mind of an idiot, what should we not be wil-
ling to do for the flames of intelligence which may spring
from the mind of a normal child?

This is the phenomenon of liberty which should in-
terest us deeply; to observe the child in this first moment
of his inner awakening, in this moment in which he grasps a
task, as a drowning man seizes upon something which will sup-
port him and carry him to safety, just so the child takes hold
of work for by this will he live.

Now, to know how to discern this teachers must need
have a spiritual instinct so as to see, to feel, to be moved--
if need be, to appreciate the magnitude of these facts so sim-
ple that in the mass they have passed and still pass unob-
served. To observe the child who begins to take an interest
in work, whatsoever that may be; who washes his hands, dusts,
moves an inset-- if only he works and shows that he desires and
is interested in this work -- to observe this and then follow
the child in such a way that, if possible, this inner activity
may develop without being in any way hindered by us, for then
this activity, unfolding of itself and having the means of
growth, will find its own pathway: to leave the child free

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to find this path, ~~this is the foundation upon which we build~~ our concept of liberty.

Thus, we observe that each individual chooses his own different roads; for example, in learning how to read and to write, not all children follow the same course, but each has his own way: some learn to read first others to write, some learn the vowels first others the consonants, some have certain peculiarities of speech differing from others, and so it is in all things. From this we can prove that the method of the master who teaches is not adapted to individual development. So, in attaining perfect co-^ordination of movement some children unconsciously[^] analyze these motions in one way others in another, each one seeks his own way of reaching the same end; so that we see children who, to a certain degree, have attained the same stage of perfection in reading and writing, and who compare well with the children of the public schools who are obliged to reach the same degree of proficiency, but ours differ from the children of other schools in that they each follow their own individual way of performing their task.

This is freedom. In like manner we can study the distribution of the children's work and the laws of time relative to the psychic development of the child; one might say that we can follow this spontaneous evolution of the mind as it were an organism; and the same may be said of the spirit. Once at ease in the ways of intellectual discipline, which are also the ways of psychic freedom, a child has sudden flashes

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of light in the unexpected ability to understand something for which he has not had direct preparation; he experiences a sort of awakening, the realization of a conscience which has been in process of formation. Wonderful phenomenon which indeed the teacher must know how to observe, to select, to comprehend if possible; phenomena sometimes similar to the conversion of an adult, similar to those of a genius discovering something new; an outburst of joy of a depth which perhaps we did not imagine existed in a child; phenomena which point out that intellectual development which leads to the formation of so many virtues, to inner coordination, to patience and constancy in work. This inner development is made manifest together with the gratitude and love of those about us, it is, in truth, the inner life unfolding and is, one might say, the metabolism of the inner life which is free to give growth to man's mind and soul.

Now, the aim of freedom is not to teach children a certain number of subjects, nor is the aim of physical freedom to have man consume a certain given amount of food and oxygen. The aim is to cause the growth of the organism. Then we must not judge these pupils of ours by the number of things they have learned but according to the high plane of inner life to which they have attained.

All that a child may be able to do: to produce work, to learn to read and write, to know arithmetic, to do manual labor, all of these are merely the means which furnish

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the exercises necessary to the birth of the inner-consciousness; they are the victories he wins leaving them behind as he advances. It is a well known fact that no student carries with him the impedimenta of all he has learned, and the knowledge once acquired is left by the roadside, what actually remains is the organism which has developed by these means.

Now, to see to it that the impedimenta does not stifle life but that life ever advances leaving behind it these means, this is what pedagogy of freedom teaches. The aim of the spirit is to live up to its laws, to expand, just as the aim of the body is to live up to nature's laws.

There is a Biblical quotation which says, " Rain = water falls upon the earth, then returns as vapor to the place whence it came, but it does not return void, it has made the soil fruitful. " So the spirit on its road leaves wonderful traces of work accomplished.

It can be said that civilization travels the same road as does the mind of a child left to self-development. It would seem in truth that society must, in attaining its aim, have accomplished a great work and certainly the instinct of humanity is that man must accomplish the labor of producing civilization and of transforming environment. But man leaves all this labor behind him, having gained a broader spirit, in that he has a larger conception and greater comprehension of love; of the virtues which form part of the very life of society, of heroism, of the perfection of those virtues which are

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the counterpart of a conscience developed in freedom, the end,
the one great aim of all social work.

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LESSON VII.

Figures of comparison are not sufficient for judging of the anthropological data which we may ourselves gather on the subject, in general, an affirmation is insufficient for us we also want to know the cause; hence it does not suffice us to verify whether a measurement is normal or not, but we also tend towards searching into the reasons of this possible irregularity. Therefore the study of the causation of the deviation of these measures enlightens anthropology and especially anthropology as applied to the student. Then too the knowledge of the whole of this causation may lead us to the formation of a judgment as to the whole personality of the child.

Hence this is the substance of what we call the biological history of the scholar. In the biological history we do not want only the barren anthropometrical picture, but we want the real history of a personality which has developed.

It is necessary for this reason to study the various coefficients which influence the attainment of normal measures. It may be also our task to study these coefficients, when we have placed ourselves on the road of research, for it is not stated that all the causes of deviation from the

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normal are yet completely studied, thus positive science has only given us a few data (which nevertheless are precious to us) to enable us to form a judgment. Some data escape the teacher entirely which relates to the history of the child in the first years of life.

You know that today the tendency for this reason is to unite the action of the family and the school in the gathering of the biographical history of the children. One of the most practical plans, and one which in great measure has been put into practice in certain countries, such as America and England, for harmoniously uniting the action of the family and of the school, for the study of the child is exactly this, the biographical chart. Indeed together with the biographical chart there exist, mothers' records which are the mothers' guides for following the children's development in the first years of life. Consequently the mothers' record should form the first page of the scholars' biography. What the teacher can do in preference to the mother is to interpret the data collected by the mother. Medicine, which has specialized in the care of children has today not only developed a complex hygiene but has also collected many of these anthropological data which form part of our studies.

It is a question then of having certain knowledge which can guide in judging the child. Amongst the elements which can be useful to us in this judgment, we must place in the first line that of weight because you know that newly born children and those in the first year of their life can be measured especially in regard to their weight. What they may commonly weigh is known; in many of the more cultured families there are scales for weighing small babies. It is well known that mothers love to weigh their little babies every week or every day especially during the first year of t

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their life, and another table of the growth of weight during the first weeks and the first years of life are now in the hands of all refined mothers.

To judge these figures is a task which would belong to the teacher from the fact that the teachers are fewer in number than the mothers, since they are a part of the whole community and being in a smaller number are more accessible for diffusing the knowledge. Babies at birth have normally a weight which varies from $2\frac{1}{2}$ kilos to 5 kilos. Now these variations are normal; that is to say that the child is normal even when varying so notably; we should understand by abnormal not the child who exceeds the normal but the child under-developed and more disposed to sickness. Thus within these normal limits we have degrees of weakness and of strength.

It is known that the strongest children are those of mothers who are over twenty-five years old and under thirty-five, that is to say between twenty-five and thirty-five years old; this is also the age for the bringing forth of geniuses. Thus in the anamnestics data of children to obtain the age of the parent has a certain value.

Babies two days after birth have lost 200 gr. of their weight; this weight is regained eight days after birth. If the weight is not gained eight days from birth the child is weak — predisposed to sickness. Consequently, this fact alone gives us a model for the judgment of robustness or lack of robustness in the child.

Babies reared at the mother's breast after six months double their primitive weight and after a year treble it; on the other hand babies who are not reared at the breast in general attain this double weight at the end of the first year of age, that is to say instead of trebling

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they only double their weight. A coefficient important in judging of the normal, or the greater or lesser development of the child is the thoracic development. It is today customary in all private houses to obtain this measurement.

Let us remember the morphology of the body of the new-born and of the little child; in this morphology we find that the torso obtained over the lower limbs in its development as to length and hence also in the sense of width we find that the thorax is very much developed. Now exact data in relation to this exists and this exact data is also studied by placing it in comparison with the mortality of the children who were measured. For example the thorax of a certain number of children is measured, these children are followed through life and studied in the first two years of life. Thus it is noted that the children who have a thoracic circumference greater by nine centimeters than the half of their height (you know that when an individual has attained his full development his thoracic perimeter equals half the height, hence the child has his torso much more developed and his thoracic perimeter much greater than half his stature and to be exact the new born infant has a thoracic perimeter greater by nine centimeters than his height) in this case mortality is lowest; fifteen to twenty percent. If instead the thoracic circumference is larger by barely seven centimeters the mortality doubles and reaches forty percent, if greater by only four centimeters the mortality is seventy percent. Now be it understood not all the babies born with this thoracic perimeter are dead; when the mortality is high those who have survived will be weaker.

Nevertheless to have these data is a valuable guide for whoever wishes to judge of the physical development. Why seek these data in the

first years of life rather than the stature which afterwards, as you have seen is so much more important? Because there is no stature in the newly born. Stature comes from standing, standing erect. Now the baby will have length of body not stature and this bodily length is not very possible to measure hence it is not the data which is easily collected, thus it is only later on that we study height and certainly we study the stature of the children who come to school as for example to the 'Casa dei Bambini.'

The factors which contribute to the variations of stature have been much studied, especially as far as the variations of stature in the adult individual are concerned. Indeed the real variations of stature we can only study in the completely developed individual. However a fundamental factor contributing to determine the stature, the fundamental factor, and were there no external causes of variation it might be said the only factor, is the race. Evidently in every individual conceived there exists a final biological destiny to which he must attain and which is decided by the species which reproduces itself so evidently, hence to know the race is the most important fact in making the aforesaid judgment.

The other factors which may contribute to the variations of stature are evidently secondary when they are not pathological factors and these secondary factors in any case always contribute in a simple way, i.e., to diminish the stature, to hinder the attainment of that stature natural to the race, not to augment it except in the case of gigantic growth which is a real pathological form of variation. But the common variations which come from adaption to a form of labor, from adaption to social conditions, etc., that is exterior conditions to which every normal man in his social life is subjected, can contribute only in the sense of hindering the devel-

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opment and diminishing the stature.

This then is of great importance to the children because if on the children there is such a well noted influence, this same thing which has been studied in the adult and which hinders the growth, this cause should be conscientiously combatted by us. And then that place where humanity must pass its years of growth, the school, may be a place of protection for the species.

One of the social factors which contributes greatly to hindering the development is work. It is known that adolescents work, that young men and young girls are working and in sociological anthropology deformities from work are known, these deformities from work can directly bend the skeleton and then the diminution of stature is evident; but they may also contribute to hindering normal development and above all it is the greater deflections which are united to the factor of labor.

One of the greatest social questions, one of the best known questions because it comprises the rescue of the proletariat, is the great social movement relative to the emancipation of the working-men; it is based precisely on the study of the laborer's body, as to how it compares in relation to the body of the man who is living a freer life and is in better social conditions than he. It is not the feelings, the intellectual loss, the death of the spirit which is considered in these workers, but what the workers set forth as the all conquering reason for their cause is the body, impoverished or deformed or poisoned which displays a wrong to the primitive rights of life and it is evident that saving the body the whole man is thus saved and that the labor question is not a question of hygiene but eminently a social question.

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The story of occupational deformities is surely one of the most tragic pages in the book of humanity, a page which today we have hardly begun to read and whilst in the Middle Ages there were unfortunates who used to show their sores or who used to deform themselves to move the hearts of the passers-by today a much greater panorama is instead displayed to the eyes of all men to startle their consciences. Today it is not the poor, the beggars, but instead the men who produce the whole social labor who claim the interest of the entire public for so worthy an end as their rehabilitation.

Thus the deformities of the laborers can be measured, and they are measured and form part of the data given by anthropology.

At one time; here in Italy, the Carusos were famous, they were children who worked in the sulphur mines and had to carry burdens on their shoulders; the shoulders became curved and the skeleton could not grow so that they developed as hunchbacked dwarfs solely by this special form of child labor. But this extreme which aroused the whole world although but a small detail of a much greater problem, this fact in less outstanding extremes is found amongst almost all laborers. Thus for example the miners, the stone cutters, the rice growers, all who have to work and work sitting and standing with bent chest, all these especially if in adolescence, they were subject to compulsory labor, have a stature notably different from the normal stature of man. You will say, "But the children are free from this because today child labor is prohibited." The children have escaped from this special form of labor, yes, up to a certain point, but they have however their own labor which too produces deformities as other forms of labor do, only these deformities have not yet become a social question

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as the study of humanity we are making today. These deformities of the scholar still form part pure and simple of the chapter of hygiene.

Now you know that a sickness or no matter what kind of transformation cannot form part of hygiene if there is no medicine which can correct it. If we expound the theory of hygiene and nothing else we only offer insult to those living in bad conditions, the same insult we should offer someone with bent shoulders in calling him 'hunchback', or in telling one who does not see that he is blind, or one who has a twisted leg that he is crooked, or one who stammers that he is a stammerer! This bringing into prominence of the ills of humanity would not be hygienic if no remedy is offered; then if the remedy is medicine this remains a matter of hygiene, but if it is not medicine, if the remedy implies a social reform then it becomes a social question.

Thus the deformities caused by labor are all social questions. Indeed we do not go and tell a 'Caruso' to exercise his shoulders or to exercise himself in a certain way but we say, "The child should not be submitted to this work." Similarly we do not say to the stonecutter and the miner, "You are anemic, take a tonic, something which may neutralize this poisonous or deforming action on your body." No, we say, "Man has a right to life and should never be submitted to these causes of deformity or to these poisons." Quite other should be the guides for solving this problem and hence this becomes a social problem.

But the deformation of the children by their work is still a hygienic problem, it has not yet become a social question although all scholastic books are filled with descriptions of these evils which afflict the childhood of society.

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If the unfortunates of the Middle Ages who used to show their sores were a small episode in relation to the great panorama of today which displays the ills of the workman, the social problem of the workman is very limited as compared to that which relates to the ills of the scholar since the ills of the scholar are different throughout the entire society.

Today who does not know that the children are deformed or get sick from the fact of their work that the spinal curvature of the scholar = nearsightedness, etc., are phenomena which seem like pathological phenomena but which are due only to the adaptation necessary for social labor?

You all know the remedy to which recourse was had for these ills of the children: the making of benches (or seats) which should prevent deformities; without reflecting that when the skeleton is deformed, the whole organism is out of gear and that the child also has heart trouble, etc. But it is not said that he is man, oppressed in his character, in his inner life, man who cannot develop his intellect, who has not liberty of thought, to all this we have no treatment to set up, whether it be an orthopedic treatment, such as the bench, a treatment by tonics, such as codliver oil given to all school children because the children are anemic, whether it be that of the construction of the classrooms so that the children should not become asphyxiated, or whether it be abundant light so that the children may not become nearsighted.

This is not the treatment, this is not the remedy, for the question is not one of hygiene, and all the above mentioned are only little palliatives which today are multiplying to infinity but in vain: but it is the social reform of the school, which is demanded by all these phenomena.

and we are now examining.

How all this simplified the treatment of the scholars! If the scholars become crocked, anemic and blind only because they must at the teacher's command remain motionless in some definite place, let us not oblige them to remain in this place but let us leave them free; and when the scholar is intellectually weary he will rest when his eyes are tired he will go and find a place where the light is better, and when he needs a lack of air he will go out into the open.

It is not a question however of transforming the benches of the schoolroom alone, or any other thing, but it is the school itself which must be transformed. However a greater reform than that which today we endeavor to accomplish with palliatives is needed, a great reform because it is not a question as in the adults' case of finding an environment but also of finding a method of saving humanity!

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Another much needed social factor which influences the development of the stature is that of nutrition. This is obvious, is so evident that it suffices to state the fact to immediately understand its reality: since the body is made of that material which man takes from the surroundings in the form of nourishment, and must grow by means of this material; thus when the body cannot absorb a sufficient quantity of material it cannot grow sufficiently either and is limited in its growth as compared with the average. Even this is certainly not absolute data, as is always so when we are dealing with problems concerning life. These problems are always immense and complicated and their statement, one may say, is nothing but an average, a generic line which serves only to guide our decision as to a phenomenon of which it is difficult to judge. Thus for example it is

known that the taking of nourishment alone is not sufficient to increase the growth, even allowing that growth is due to a biological factor, but the individual must also be able to digest it; thus if a small rich child has an immense quantity of food but is hindered from assimilating it, from digesting it entirely, then even this child is undernourished; besides his organism works harder than does that of an underfed child because it is not taking the food but in normal conditions of equality the individual who takes an insufficient quantity of food certainly cannot grow normally.

And this which is such a simple and evident fact was not thought of in the schools until yesterday. We never asked if the children had eaten or not, only we were careful to judge if they were sufficiently attentive, sufficiently intelligent in solving a problem for instance, or if their imaginations were vigorous enough to invent ~~some~~ the unfoldings of some literary theme. Only today the problem of the scholar's nourishment has become part of the school, and the question of food for the scholar, of school meals, is a modern question of school hygiene.

if
Now it is thought that underfeeding especially in the years of childhood renders the body weaker, it can be understood how all deleterious influences ^{due} to adaptation to the surroundings, deformation by labor must be aggravated.

The figures given by the investigators of anthropological data on the scholars all agree that whatever be the country, whatever the race, rich well-nourished children are four or five centimeters taller than underfed children. This fact also is shown in the adults: statistics taken in all civilized countries show that the poorest laborers have the lowest stature for example in Italy, the country people are shorter than the work-

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man. This cannot be a question of race, because the workman of a city is an emigrant from the country and immigration which is shown setting towards the big cities, hence the difference between the two kinds of individuals is purely social. Thus in the great cities where better means of livelihood than in the country are found, in Italy in the cities the workman has greater average height than the country man. Instead in London where the countryman has better means of sustenance than the workman and where the causes of pauperism are greater for the workman than for the country laborer the city workman is found to have a lower stature, in the average than that of the countryman.

This and many other factors serve to show that lack of nutrition can really hinder the attainment of the normal stature which should be the stature of the race of each one.

These differences of a few centimeters are such minute differences that they are not visible to the eye and only appear in the averages; and when it is said that a factor, that a data only appears in the average it may be understood that it is not an absolute data. When for instance we say that men are taller than women we do not state an absolute fact but only declare the result of an average, indeed there may be women taller than men and vice versa; thus when we state that the rich are taller than the poor this does not mean that there are not poor people taller than rich people and vice versa.

On the other hand there does exist ^a difference absolute in character and without exception; this is to say there are differences of stature so great that not only are they visible in the average but also always in the individual data. These variations are pathological variations for ex-

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ample ricketts. All sufferers from ricketts are of stature inferior to the normal, these sufferers are from 10 to 12 centimeters shorter than normal individuals. Another deviation is to be dwarfish, childish, idiotic, united to thyroidism, for example, the cretins who have the thyroid glands abnormally developed, for this reason cannot grow. And when an adult man has the height of a child of ten it is no longer a matter of averages.

Thus certain individuals who grow up diseased are notably inferior as to stature; such for example are the tuberculosis children, the syphilitic, the children suffering from pellagra and those suffering from malaria and so on down the list. Now all these sick children who can be studied in the schools ought to have special treatment, to be treated separately, and a school of their own, as is, indeed, done today, because today all that is a symptomatic treatment seeks for symptoms and an immediate remedy is found in the full development and greater vigor of the schools. Hence it is natural that in times when endeavor is made to remedy the scholars' spinal curvature with an orthopedic bench, near-sightedness with light, anemia with cod liver oil, that it should be thought to give quinine to the child with malaria, sea air to the tuberculosis child and a special class for idiots.

But these are only palliatives whilst ~~int~~reality there is but one remedy, and that is reform, and unless we employ this we are only multiplying useless remedies.

Now to finish this lecture I should like to point out another factor which undoubtedly influences human development. For a long time it has been said that man does not live by bread alone, and if we are speaking of man's nutrition then let us try to understand the whole subject of

his nutriment, and when nutrition is spoken of in this case the nourishment of the body is meant also. I want to point out certain stimuli which are not of the material order which I call psychic stimuli, and which are needful so that man may grow properly. All animals in their first period of growth (as man always does, and to a much larger and higher degree) need the stimuli in order to live at all and undoubtedly in order to grow.

These psychic stimuli are of so many kinds, stimuli for the sentiments and intellectual stimuli, for children above all stimuli of the sentiments, for men intellectual stimuli also.

There is one of Esop's fables which tells how a bear had as offspring an ugly little cub which did not grow well. Then a rook suggested caressing the little one a great deal and the little bear grew handsome.

A young lady here in Rome in a house of wet-nurses undertook to follow little children in their development (thinking that it might one day enable her to confirm this phenomenon) she became very fond of a plain looking child. One day she called an inspectress to show her that the ugly looking child was becoming pretty. The inspectress did not believe this fact and withheld from spoiling an illusion caused by the love borne to the child. Some time later the young lady called the inspectress to show her that in reality the child had become pretty. The inspectress going with the idea of being sympathetically indulgent to this illusion, was greatly astonished to see that in reality the child had become better looking.

We have proved the truth of this argument in the "Casa dei Bambini". Not only have we seen children improve aesthetically but improve also physically just from the effect of what we call psychic stimuli.

For instance in the first "Casa dei Bambini" which I had in the

quarter of San Lorenzo; (I had not the experience I have today); I was simply the doctor and hygienist from a certain point of view, of the physical conditions of the children. Then I began to take notice, I do not say of the sicknesses, but of the undernourished condition of the children, and I exhorted the mothers to go to the clinic and have tonics made up for their children. Now I was in the midst of a population of Miterates of so low a social level, so far from the possibility of making use of every help which society can give that I could not find a single mother who had a minute of time to take her child for treatment, or even of sufficient scientific faith as to believe that treatment might help her child. Hence of ^{none} ~~were~~ the children looked after. Nevertheless they became as healthy as if they had had tonics. Be it understood that we gave no nourishment no school lunches. But, I believe, the inner joy, the continual contentment was what brought about the bodily improvement, and hence the growth of even the skeleton.

As you know there are the physiological theories of James and of Lenz who give prolonged descriptions of the physiological symptoms of sentiment. It is known for instance that in a state of sorrow the glands cannot secrete the juices and hence digestion cannot ensue and this emaciation follows. Now this is a bodily fact but the cause is not of the body. Vice versa it is known that joy dilates the heart, the blood circulates more quickly, all the tissues are better nourished and the metabolic change is facilitated, and then the nourishment obtained from the environment is entirely absorbed, and happy individuals have good complexions and grow fatter and even this is not a bodily cause. The weight can be measured by the scales, the growth can be measured by an anthropometer, the tissues of the

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skeleton can increase and yet the cause is not a material one.

Nature with mother's milk also gives a mother, motherly love. The child grows thus by means of the milk and also through love. It is felt that all men need something other than the material to live materially, perhaps as yet it is individual matter, because every one has kept his own experience to himself and only an opportunity is lacking in order that this fact should be an acknowledged social; fact as one of the precious factors which the whole of society should grasp and use for its own betterment.

One of the proofs that this is so is that a form of punishment exists today in which the pain of death is abolished, as for instance in Italy. It is known that in Italy ~~however~~ that ~~however~~ however horrible a crime, it can never be punished by death; the right to kill is completely excluded from human power; and justice in the form of destruction of human life can never be exercised. It is understood a man may not be put to death by cutting off his head and so on. This prevents this special way of dealing death. But we have a much more terrible punishment than this which brings death eventually, and this is solitary confinement. It is known that the greatest criminals are condemned to stay ten, twenty years, the first ten or twenty years, and sometimes even thirty years in a narrow bare cell where is simply condemned to one thing and to nothing else; he is deprived of all psychic stimuli.

It may be said that we have passed from a form of death directed at the body to a form of death directed at the spirit, but the body dies just the same, for it is well known that after about ten years the condemned die of tuberculosis, a wasting fever or other diseases.

~~The man undergoing cellular confinement is a man who~~ may be said to be in the most perfect and ideal state of repose from a certain mistaken standpoint which can be compared with the erroneous point of view from which freedom is today regarded, for instance, freedom is believed to be a species of revolution and that repose is lack of movement. Who works less than this? In a little room in which one cannot turn round, hence the muscles are not used, and the eyes do not wear out because there is very little light. Nothing is lacking for the material life. They sleep and eat regularly and they do nothing; they neither read the newspapers, nor hear a human voice, nor see a face over a wall, nor have they any news from the outside world. Only the walls of the cell and a little corridor open above for air where they can walk for an hour a day. It may be said that no man is in better condition than such a man who, from a laborer's standpoint, is in an ideal condition, since rest appears to him an ideal state, to not be disturbed by other men having recourse to him, since absolute repose is to have no news of humanity, to suspend correspondence, to suspend the possibility of news of the world, to read no newspapers, to read no books, and hence to have absolute repose of the intellect, of the senses and of the muscles.

Here then is a man who has attained in an ideal way to the desired repose. What is lacking to this man? Something spiritual is lacking which also nourishes his body. To see colors, light, faces, to communicate with humanity, to receive those aids which are not as we are accustomed to think superficial aids, but which are like bread a means of life: the need of having news and encouragement from other men so as to be helped to live by other men, for the isolated man cannot live if he does not form part of the whole of humanity. This is what he lacks.

~~Thus when bread is given nourishment is not given, for man does not live~~
by bread alone. So with other things, with something which comes from another spiritual personality, and which, in its most conscious stage we call love, this is necessary for him, and by this man lives. And then, too, that the intellect be kept wide awake it must be continuously nourished by intellectual stimuli for the most intelligent man in the world would become an idiot if he endured solitary confinement.

Hence, when for instance in a school, we speak of giving the best conditions of even material life, we cannot limit ourselves to what hygiene dictates to us, that the child at school should be well nourished, the school well aired, and the child free to move about. If we wish to direct the child's life we cannot limit ourselves to directing the physiological life which relates to the physiological laws of his body, but we should also direct that other life which, too, has an influence on the body. When, for instance, we say that the child should be freed from the teacher, we do not say that the child should be exempt from wise direction in his life, but we say that he should be free from the tyrant of his life. The teacher who does not realize this complex life and the nourishment she should give can only destroy the child's existence; but the teacher who not only knows how to clear the way and leave the child free, but also knows how to be the organizer of the stimuli, which are stimuli for the complicated life of the child, and knows how to organize them and direct them, she is the real teacher.

The child, in order to grow well, should pass from the mother who gives milk, a single nourishment, and love a single stimuli, to a

~~much wider environment as to nourishment and stimuli, this wider envi-~~
 ronment is the school. The child of school age is nourished on many
 foods, not alone on milk. So, too, the stimuli he needs are many. But
 as the material nourishment of the little child needed direction, so, too
 the nutriment for his inner life and the teacher is the director of
 such nutriment.

Man will multiply his social stimuli when he grows up free in an
 environment rich in stimuli, and it is in the environment richest in
 stimuli that man always becomes most productive. When we look at social
 reform we are looking at this uplifting organization of the exterior
 stimuli of humanity.

The needs of man in any one of the past centuries were much more
 material than those of man today. Man a few centuries ago really sought
 bread, fire and love; man today cannot live only by bread by fire or by
 love, but needs beauty and grandeur of vision as to the destiny of hu=
 manity and all those various stimuli which spring up in this more devel=
 oped environment to nourish that part which man does not yet consciously
 feel as a living organism. It is art and industry which today give sat=
 isfaction to mankind who no longer are satisfied by the more limited
 psychic stimuli of times past, as they are no longer satisfied with
 limited means of existence, for they need the theatre, finer clothing,
 and a greater variety of clothing, and to travel more. So, too, we need
 more varied means which can help us in developing our inner life.

We really are, I believe, in a epoch in which this slumbering
 life of ours is about to awaken, we are in that state in which conscious=
 ness is not yet vivid, but already it is beginning to feel all the facto

MARIA MONTESSORI

MONTESSORI TRAINING COURSE

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LESSON VIII.

A N T H R O P O L O G Y .

Contrary to the other measurements of the body, I advise that the head measures be taken only once a year and from among the different ones I would select only three, namely, the greatest circumference of the head, which gives one an index of the total development of the head, and the two greatest diameters, that is the greatest anterior-posterior length and the greatest width of the head.

Unlike the ordinary biographical charts used in the schools and containing numerous measures referring to the head, unlike these I have chosen only a few measurements and I advise that they be taken only once a year, since the head does not change after a certain age, that is, after the years immediately preceding school age and in those years its growth is very slight. Now to my mind the aim of child study is that of following his growth.

Therefore those measurements which vary should be taken frequently and those which remain fairly constant only rarely. This is somewhat contrary to the usual advice of anthropologists even of those who have made a particular study of school children, for the concept remains that the head, being from a biological standpoint the most important part of the human body, should for that reason be studied the most.

I should like to take with you a hasty glance of a skeleton in its entirety so as to interpret the different parts of the body in the light of their importance in an absolute sense, for example, that which shows the difference between man and animal, or between the different human races, a point of view of a special interest to anthropologists who are studying the human species and the different races; or the importance of the different parts of the body from another viewpoint, the purely biological, but referring to the transformation of man himself through the ages and permitting of a comparison of the forms assumed by the human body in the different periods of individual evolution.

From a general view of the whole skeleton we see that it is characterized by its erect position. We often think that mere form is something secondary, let us say, to volume, that, for example, it is more worth while to acquire normal dimensions than a perfect form, on the contrary not only the form but the position has the most profound biological importance; profound because it may be said that the whole morphological

difference between man and the mammalia can be summarized in one thing; his position, his erect posture. And should we wish to make a morphological comparison between man and the primates, between man and the lower mammalia, we would see that the differences resolve themselves into this, that man has a standing posture whereas the other animals have not that position, hence their torso is horizontal where man's is vertical.

Haeckel, with his materialistic theory, said something, undoubtedly excelled by today's ideas of evolution, but which is nevertheless attractive and has fascinated many in its time. In this description of man, Haeckel said, "Think of man when he stood erect for the first time; he realized that his arms were no longer necessary for walking and they became free; his eyes which had looked only toward the earth had an immense horizon to look upon, and this expanse of horizon greatly developed the brain. Behold man's great intellect when those limbs which were freed became the servants of the brain and man began to labor! Behold man! "

However, I repeat it, the explanation of evolution is not so simple a concept as this; but the above description may serve to fix the idea that, in general morphology, not form alone, but also position, has a fundamental importance. And it is from this position of man that we explain the shape of the vertebral column, the ability to move the arms, etc.

Now, another general glance which does not refer strictly to man but also to an analysis of the skeleton of the higher or-

ders of mammalia.

The height of the skeleton can be divided into three parts; one consisting of the lower limbs, another from the lower limbs to the neck, and a third, the head. That part from the lower limbs to the neck can itself be divided into two parts; the lower and the upper. It is the usual division, first into torso and lower limbs, then limbs, torso and head, and hence torso into thorax and abdomen.

You can see how the bony structure is arranged in these different parts. In the head there is one bone, for we can say that there comes an age when the head is formed of only one bone, whereas on the contrary, in childhood it is formed of various bones closely joined by sutures. The fact is that the organ contained in the head is entirely covered by bone; it is the brain which, as we know, is the principal organ of the body since it directs all movements and sensations and assumes in man the dignity of the organ of the intellect. Well, it is contained in a sort of bone box, a cranial box. So we might say that it is a very delicate organ and in need of great protection.

Lower down there is a whole bony framework but this bony protection is not in the shape of a box but of a cage, the thoracic cage which is re-enforced from above by bony substance, but as you know this is not divided from the lower part by a bone, but by a muscular diaphragm which separates the abdomen from the thorax.

In this thoracic cage there are also organs of great im=

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importance; the heart and the lungs. Here too, there is some bony protection but how slight in comparison to that of the head. We might conclude that nature considered these organs of minor importance to the head although they are so vital that to check their functioning means the arrest of physiological life. In fact, it is well known that a pin run between the first two cerebral vertebrae into the base of the fourth ventricle of the brain, the seat of the nuclei of the nerves leading to the heart, will produce instant death.

And below the diaphragm you see that the skeleton takes on yet another shape; it is no longer a box or a cage but a sort of bowl which contains the entrails. In fact this part of the skeleton is called the "bacino" and is a sort of bowl supporting the abdominal organs, which are also very important to life, but not as much so as the lungs and the heart. One can live through having lost over a meter of intestine, one can live without the stomach but life is threatened by only a slight lesion of the heart, furthermore the functioning of the digestive organs is periodic while that of the heart and lungs is continuous and the suspension of the latter brings life to an end.

The three sections of the body constituting the torso are characterized by having the bony structure on the outside. While in the limbs the contrary is true, the skeleton being inside and the fleshy muscular parts outside so that the skeleton is only a support and no longer a protection.

Thus we might infer that the generic formation of the skeleton in itself shows us the relative importance of the different

parts of the body, the most important of all being the head
then the torso, and lastly the limbs.

And he who draws this conclusion is right. But if we consider it from another standpoint, not from the point of view which is absolutely theoretic and does not interest us, but from a practical point of view which precludes all such interpretation and leads us only to observe, for example, the phenomena of growth and nothing else, why then we are no longer interested in that special importance that the form of the skeleton lays on the different parts of the body, but, on the contrary, we are interested in the phenomena of the transformation of all these parts during the period of growth.

Now the parts in which the greatest transformation takes place are the lower limbs whereas the parts slowest in transformation is the torso, and the head is the slowest of all. In fact, the large head and short limbs are a characteristic of the new-born babe, since the lower limbs must grow the most and the head the least. So, from the standpoint of growth, that which most interests us is the development of the legs and their varying harmonious proportion to the torso, not the growth of the head.

This does not mean that we should completely neglect the study of the head. That is why I have said let us limit the study of the head for example, to following its growth from year to year. Not only the size of the head, but the shape also can be studied from different viewpoints; for example,

from the standpoint, so interesting to anthropologists, that of the comparison of the different races of humanity, of the different species, human and animal; and, in the races, of the brain of man with that of woman, in the individual, of the infant brain with that of the adult; and it is this point of view which is of particular interest to us.

The fundamental differences between the head of a man and that of an animal can be summarized in the fact that in man there is a greater growth of the part containing the brain while in animals there is a greater growth of the facial than of the cerebral portion. There is also another difference, the animal's head is, in general, provided with bony protrusions which serve as a supply source to powerful muscles, which are muscles of defence. So we might say that the main difference between a man's head and that of an animal is that a man's head contains a large brain and is unprotected while an animal's head has a small brain and is well provided with means of defence hence man would seem the weakest of all ~~mammalian~~ animals.

Material protection is always slight when the unprotected being is conqueror which proves that there exist other means of defence. Merely observing man's cranium and knowing that man is a victor we must realize that it is not the material organ which makes him victorious but that there is something else, since as a mere organ it is the weakest. As to the skin, man is the only unprotected being, all the vertebrates have a hide, scales, an external skeleton, etc. Only man is naked, hence this material

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weakness in man would indicate a strength which other animals do not possess.

The face is smaller in man than in the mammalia. If you will observe the profile of a living person you will notice how the entire face is compressed below the forehead, while on the contrary in animals the snout or protruding face projects out and away from the brain. In man the brain has taken on, in its development, such dimensions that it has caused the cranium to project over the face.

This great development of the brain gives the forehead a perpendicular direction while in animals the forehead is more or less retreating.

When we look at the differences in the sexes we find that woman has a straighter forehead than man, that man has a slightly retreating forehead. It is wellknown that in the human races the inferior races have a more retreating forehead than the superior. Hence we might say that woman has characteristics of superiority in the very shape of her head and, and this characteristic of superiority which is based on the comparison with animals and inferior races, must stand in relation to greater development of the cerebral man, then we should conclude that woman has more brains than man. Now this conclusion would be logical since the bony substances cannot change and have a direct relation to the volumetric development and so we might take this form of defence against those who say that woman's brain is of necessity inferior, in an absolute sense, to

men's since it is smaller. But on this point I hope to give a separate lesson since it is another argument of defense which science gives to women.

In a comparison of the characteristics of the head of an adult and of those of an infant we find that in the child, the new-born babe, for example, the face is much smaller in proportion to the cranium than in an adult. You can observe these two skulls to see the phenomena. The face of the babe is very small and is, one might say, a little appendage to the skull; whereas in the adult there is that other proportion which is characteristic of the skeleton of a completely developed individual.

So if we were to apply the reasoning used in reference to the brains of man and woman, we should be obliged to say that the new-born babe is most intelligent and that, in a measure as his face grows little by little, so his intelligence diminishes since these reciprocal proportions have this variation. Thus, you see, we cannot make assertions with such apparent simplicity when we are observing biological phenomena.

As I was saying, that which is of especial interest to us from our point of view, is the transformation of the head; how this small skull is changed into this other large one, what are the laws thereof, when is complete development attained, etc.

Now, you know, that an infant's head has not completed its ossification and in this incomplete state there is an osseous division which does not exist in the adult. For example, the infant's skull has two frontal bones while an adult has only one. Yet another great difference is seen in the proportions of the

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infant's skull has two frontal bones while an adult has only one. Another great difference is seen in the proportions of the head itself independent of the face. The forehead is less developed in the infant than in the adult though as a whole the cerebral skull is more developed than the face. Still another difference is to be found in the shape for the infant's skull has certain characteristic bumps which correspond to the embryonic points of ossification which are five: one occipital, two parietal, and two frontal. So that looking down upon the skull of an infant it looks pentagonal while in the adult these bumps having disappeared the skull has a circular shape which is now elliptical, now ovoidal and now circular.

The growth of the osseous box is dependent on the brain. This is a very inaccurate expression, evidently it depends on biological forces, on the phenomenon of growth in itself, but we mean to say that the bones have no control over the brain but rather the opposite is true. For example, if a child's brain grows but little his head remains small, but the contrary does not follow; that is that the brain is incapable of growth if an early ossification has taken place.

You are acquainted with microcephalia. ; It was thought that this came from the fact that an early ossification took place hence the brain could not develop and there was a surgical cure much in use which consisted in breaking the skull of microcephalous children at the slightest sign of arrested development.

Hence this covering, this boneless structure plays a

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secondary part in respect to the brain. By observing the growth we see that the dimensions of the skull increase, then it changes shape, because the forehead is more developed in proportion to the lower part and then these bumps disappear.

Now, in the case of a normal child all this takes place unnoticed. But if growth does not proceed in perfect order of succession it may happen that the head does not develop in exact proportion with all its parts, but that some parts develop sooner than others, in which case we have differing proportions in the skull of a child, but we find that this lack of symmetry almost always vanishes in the adult. Hence in a school of poor children who are underfed and grow up in unhygienic conditions, though they be of normal intelligence, there will be found a high percentage of deformed heads. And we might be led to think that there are great numbers of deformed and degenerate children. In fact, there was a time when the statistics of abnormal children among the poor classes were based upon the malformation of the head, whereas these malformations are compatible with normality and they disappear in the course of growth.

As a matter of fact the statistics of today show that, for example, there is twenty percent anomaly among children and only three percent among adults of the same social class. This means that many adults no longer have the anomalies of their childhood days and this should have weight in forming an opinion as to the shape of the head since we know that it is possible to find apparent anomalies where in reality there are none and so

Answer 2.

judgment should be passed by one more competent in the matter than is the teacher or the mother. It is the functioning of the brain which should attract our attention and we must not worry over an intelligent child whose head happens to be imperfectly shaped.

As to the growth of the head we know that in the first four years, especially in the first and second years, the growth is very marked. As a matter of fact the greatest circumference which at birth is one hundred and five millimeters increases thirty-one millimeters in the second year, fifteen in the third year and ten in the fourth. After a child is four years old this growth diminishes greatly. At the age of eight or nine it becomes as imperceptible as is the growth of stature after the age of eighteen or nineteen. This is in exact relation to the difference there is between the whole body of a child and that of an adult. The child has a large head and short legs, which means that the head will grow very little and the legs much; likewise he has large eyes and a small nose.

Now the growth of the brain, that which is noticeable, which should be followed with anthropological interest even from our standpoint is that which takes place in the first three or four years, hence in school as far as dimensions are concerned it is sufficient to observe the growth from year to year.

I said to pay no attention to shape if it is anomalous; but on the other hand a most interesting study is that referring to shape in its relation to the races. The influence which race has

upon the shape of the head is of so immediate an importance that anthropologists have given themselves greatly to this study and have gained some definite, positive results, something which can be applied with great facility. The shape of which we speak is that which refers to the whole, to the relation between the length and the width of the head and consists in being able to say whether a head is long and elliptical like this one or whether it is rounding like this other one. It is known that the various human races have differently shaped heads: round heads, long heads, and the round are called brachycephalous while the long are known as dolichocephalous.

The data relative to the brachycephalous and the dolichocephalous is determined by anthropologists by figures referring to the numerical proportion between the greatest length and the greatest width of the head: that is to say the cephalic index.

The cephalic indexes have been made a subject of much study also that of pupils for example in America where the pupils belong to various races, and also here in Europe we have pupils of different races and it has been found that at a very early age — at from four to five years old — the nature of the race is established insofar as concerns the head; that is, the cephalic index remains constant (in the various ages). So in children we need take the cephalic index only once for it will always remain constant. However, since, to ascertain this index, we must take two anthropometric measurements and since these two measures can give us an index of the growth, it is well to take them once a year.

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I have said that the growth of the brain is imperceptible after a given age, imperceptible in its analysis not in its importance for all know that the head of a boy of ten or twelve is much smaller hence he wears a smaller hat than an adult.

Now these facts however slight are most interesting to observe; perhaps they form a great problem in regard to education. It has been noted that in the blind and the deaf-mutes the head has a normal growth up to the age of eight or nine but that, when these children have reached the age of thirteen or fourteen the average head circumference is noticeably inferior to that of normal individuals, in them has been lacking an exercise of the intellect in relation to the senses. And right here we would have the great problem between the relation of intellectual exercise and the development of the brain, a problem upon which I will certainly not venture just now, only this will I say, this problem demonstrates that we certainly have reason for studying the growth of the head.

The instruments which suffice for such simplified measurements are these which you all know: a tape measure of metal so that it does not stretch with use, and a pair of calipers distinguished by two movable arms and a semicircular support which marks the measure in millimeters.

With the millimetric tape measure we take the maximum circumference of the head and with the calipers the two maximum diameters; the anterior-posterior and the transverse.

You must know how to take these two measures and the

points of the head to which the instruments should be applied. The points which I advise as a guide for the taking of the maximum circumference are: in front a point midway between the two eyebrows called ofrion; at the back of the head the most salient point that which rests against a vertical wall when the head is in a normal position namely the occipital point; and laterally the two parietal points which mark the center of the surface of the parietal bone.

Some authors call these latter *sopra auricula*, but, since others say that the auricular points are different ones, so as not to make a mistake let us say the two most divergent points in the parietal region. Then we take the tape measure place zero on the point of ofrion and on around the other points so as to get the maximum circumference. And we read in this case a maximum circumference of 527 millimeters, now on a living head this figure will be increased by about two centimeters.

In taking the diameter we place the calipers on the point ofrion and on the occipital point. This instrument is used by holding it by the two round ends and we must know how to feel for the two points of contact. Then we read as in this case 166.

The same may be said from the parietal points. To find with greater exactness these parietal points which are not so easily determined it is advisable to fix the calipers horizontally and then to feel for the greatest parietal distance by moving the instrument up and down, always holding the calipers horizontally, in this way one is certain of finding the maximum, providing the

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head is always in the normal position and the calipers are held exactly horizontally.

Those two measures being taken we look for the index. Shall we try it on a child? You see that it is not easy to take the circumference of all heads on account of the hair, but it is always easy to take the diameters, for this reason also the large measures which the cephalic index give are practically helping observe the growth of the head.

First the subject's head is placed in the normal position and the subject is asked to stand motionless. Then you find the anterior point on the occipion and fix the posterior one by running the calipers up and down. In this case we have a length of a hundred and seventy, a width of one hundred and forty.

Fortunately all the calculations for the cephalic index are made and all we need to do is to consult the table. The maximum diameter is placed at the top and at the side the transverse. In this case we find eighty-two to be the cephalic index. Of course, the formula may be applied namely: the cephalic index equals one hundred times the smaller or transverse diameter divided by the larger or anterior-posterior: $C I = \frac{100 d}{D}$, the resulting number being the Cephalic Index.

When this index is eighty, it is considered that the head is brachiocephalous as are all heads with an index over eighty. Those under eighty are dolicocephalous though there are other divisions and subdivisions such as mesocephalous and submesocephalous, etc.

This is useful in giving one a general idea for example of

the scholars of a school with mixed races, for with many students one can make most interesting observations on the distribution of the races in a population. Suppose for example that on these co-ordinates are placed the figures, those referring to the cephalic index on the axes and those corresponding to the number of pupils on the ordinates we should have a diagram showing in a given number of individuals the proportion of brachicephalous and of dolicocephalous.

I will refer to some charts made out by authors who have studied schoolchildren. Take Italy for example, there are the same number of brachicephalous as of dolicocephalous. And this shows that in Italy there is a mixed population of almost equal numbers of brachicephalous and dolicocephalous. This other data has been gathered mostly from among children of Romagna in northern Italy and in it there is a slight preponderance of brachicephalous children. This means that in Italy there is a mixture of two races almost equally distributed but with a prevalence of the brachicephalous in the north.

There are tables regarding white children born in America and here too we find almost the same distribution hence individuals of the two races went to America and have mingled in about an equal proportion.

In children born in Ireland we find the same phenomenon. On the other hand, in those born in Germany we at once note a marked difference, an appreciable number, in fact the majority of the children are brachicephalous; hence there has been a mingling

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of races but undoubtedly with a preponderance of the race native to the soil. So also are the children born in Russia almost all are brachicephalous and a very small number are doliocephalous. So we may say that in Russia there is practically a uniformity of race, the brachicephalous with a slight, a very slight, infiltration of alien races.

In Syria all the children are brachicephalous. Measuring children we find them all doliocephalous.

There is therefore the possibility of having a most interesting study from the racial point of view. But, I expect, that which interests us is the taking of the two diameters in order to follow and observe the progress of growth.

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7,22.

which exist in the external world, as one who awakens and begins to feel that people are moving about, that there is light, that the sun is up, that he has to work, that a new day has begun, but not yet is it that man arises from his bed and says: This is the new day and I am a new man.

MARIA MONTESSORI

MONTESSORI TRAINING COURSE

LECTURE 9 1913

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LESSON IX.

To speak a great deal about liberty does not mean as it might seem surrender the idea clearer, but rather to deepen it. This should not be surprising, because even when it is simply a study of biology which is being made and a physiological question arises, science in its attitude towards what is called a mystery of life illuminates and deepens it but does not explain it clearly. But even this is an explanation of problems, this understanding of their depth; it is only ignorance which goes near abysses without seeing them.

In my last lesson I had begun to speak of that fine instinct which ought to exist in the teacher when it is a practical matter of educating the child, that instinct for understanding inner manifestations and distinguishing between them and between those which are not manifestations of the spontaneous inner life of the child and I said that the aim of liberty should be to permit the greatest development to all the activities, the development of life.

Now a specially fine instinct is needed so as to understand which are the true manifestations of the inner life, for they do not represent all the spontaneous activities of the individual. Hence the individual has

spontaneous manifestations which are not manifestations of the life we wish to help.

In fact we see that man left to his own instincts does not discover all the laws of his life; and not only does he not discover the laws of his inner life but not even those of his physical life. Let us observe the contrasting conditions of the two extremes in the social scale: there are poor people who are not free to attain to the destiny of their physiological life, and hence there are many sick and dead.

For instance when the human race with larger economic means draws away from these conditions, it should attain to the laws of its physiological life. Thus we should find the individual who respects the physical laws in the richest classes.

There is an old saying which embodies the experience of us all, "pale death enters without discrimination both the poor man's hut and the king's palace." Social science and hygiene have in part corrected this old saying, and it is no longer true that death enters equally into the poor man's hut and the rich man's palace, but it enters the poor man's hut in double proportions to the rich man's palace. The poor die in a percentage ^{life} double that of the rich. The poor as concerns physical are in conditions of slavery double those of the rich. The study of hygiene has shown by means of statistics, what should be the average normal mortality of man when he attains to the most hygienically perfect conditions of life. And then it is shown that the rich as much as the poor have a higher mortality than the ideal normal mortality of man should be. This proves that man unaided does not know how to discover the laws of life.

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As the out pouring of the true fount of the inner life is imperceptible so it is equally easy for life to yield to the imperceptible insinuations of the causes of death, that same sensitiveness that leads us to recognize signs of life ought to lead us to flee the causes of death in ourselves.

The experience of human wisdom speaks to us continually of this. The thing we have heard most frequently is that temptations exist. The various religions have personified this evil force which appears to us not as death but as something good and which conquers us little by little without our realizing it.

Just so the symbol of temptation given us by the Bible in the devil, and in the German poem of Mephistopholes, always comes as something good and very often with riches added. Thus then it is easy for man who draws away from evil by a life of poverty to fall into evil through other channels which also lead to destruction. This is a lack of instinct (which if it existed would solve all problems and render education useless) this instinct which would lead us to know the absolute truth, as it exists for instance in living matter and in life, the instinct for attaining that definite form within exact limits within a single limit, that aim of truth in matter which is beauty. Just as he who is to attain beauty must do so along certain definite lines. If the individual who has too small a head is ugly and deficient that does not mean that he who has a large head is handsome. But he who has a normal head is handsome. There is but one way to beauty! It is truth which in predestined forms is the way to beauty and morally speaking to goodness.

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What we should prefer is to look for that road which is perhaps long to travel. On which traveling, struggling, perfecting ourselves, freedom may be attained. But surely it is a stern road of discipline, as rigorous as is the attainment of the bodily development in life.

This may seem too theoretical but I will translate into the practical where in a simple form may always be found all that has a bearing on truth.

In the schools we ought, as I have said, to aid the bursting forth of all that is necessary to life, that is living. But we must also protect from death. To this end there are two means. The second is easier than the first as it is easier to protect from death than to give life. If for the first a special intuition is necessary to recognise the phenomena, for the second a well defined material action, and one easily proved, is sufficient, which I call "not to wait on the children."

All great things in an embryonic state are simple, primordial man is simple; a cell with a nucleus of membranous protoplasm, one-tenth of a millimeter in diameter.

It should not surprise us that anything so great as the living man should come from such a simple beginning. For there is not a man, no matter how great, who did not begin as this cell.

We should not serve the individual but life, and in that way go forward to the conquest of freedom. We can have the clearest demonstration of the individual evolution of man, in its facts are developed which mean a successive attainment of independence.

For example, a child born has an independence greater than an unborn child and has acquired many functions it did not have before. The

child who is nourished by the mother than the child who is already weaned and does not depend on another person's organism.

Thus the child who begins to walk is more independent than he who has to be supported. He who speaks and can tell his needs than he who has to be interpreted and understood. He who can wash and dress himself is more independent than he who does not know how. So every step toward growth is the successive conquest of independence to a great extent natural. Why indeed does the child speak and walk, not because he has been taught, however much he may have been helped, but naturally, because nature makes him do this, in so much that we can determine the exact time when these phenomena will begin.

Indeed if we want to know whether the individual is normally developed, we must find out in what precise epoch he walks and talks. There are periods of development in which the phenomena of walking and of language are developed and a delay in the establishment of these phenomena is a sign of weakness and irregularity of development. It may be said that the child has learned to walk and talk nourished at his mother's breast, and the better he has done this the better will he attain his perfect development. Therefore it may be said that man in a certain period of his life prepares the succeeding period and if the preparations were perfect so much the more perfect will be the succeeding period. Hence the need of help for man so that he may fulfill perfectly the needs of the present period. For thus and in no other way is the succeeding period prepared: that is, walking and talking cannot be directly instigated. They are facts that nothing but nature can establish. To this end the child must develop freely, we must not hinder this growth by holding him back.

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A truth which experience alone can illustrate is that the help we give to childhood directed by us to some definite aim is frequently an illusion, since we often hold him back. We can only await the natural manifestations we cannot produce them.

This instinct of ours to help a child is like that of the man who standing in the road wishes to help someone who is getting into a carriage, and so stops that person's impetus which would have achieved this.

We have an instinct to help the child and not the child's life: when we see someone working to attain an end, which is for us easy of attainment we take his place and accomplish it for him. Thus for instance, in washing and dressing the child we help him to be washed and dressed but we hinder his activities from developing. Through our fault the child for a long time will not know how to wash and dress himself and will depend on us who hinder him from attaining later on that skill which nature would have granted him.

This attitude of the educator is very different in two cases; in the first case there is a person anxious to accomplish — and then the child is in order sooner and in more perfect order (washed and dressed) but is less of a man. In the second case the adult acts very little and instead the child acts a great deal: he is less in order (he is less well clad, etc. but is more of a man. This simple fact is, however, the fact which is repeated in the life of man up till the days of manhood, and the same may be said of the intellectual education to which we must submit. Another example: when it is stated that the movable tables and chairs are a means towards liberty since they permit of the child's moving these objects, we state one side of the question but not the whole question. In reality we

are helping the child to become independent of surrounding objects; For by moving around the child who overturns various objects learns by practice not to do so. Granted that the way of perfection is pointed out to him, moving among fragile objects he will perfect himself.

In the old-fashioned school the seats are fixed stationary, so that the children in moving around may not overturn them: in like manner plates and glasses are of metal so that they may not break; there is an instinct to hide his defects from the child as if it was a virtue to excuse him and to run to help him. But the child breaks because he does not know how to handle; therefore he should learn to handle these objects.

Whoever is dealing with a child's spontaneous activities sees that the handling of objects is a passion with the child, as the attainment of his full growth is also a passion.

But the child cannot perfect himself for he will not recognise his error, if he does not break fragile objects, if he does not perfect the movements of his hands. This is the only real way of perfecting himself, by his own experience. It would be an illusion to think that we from without are able to establish this muscular dexterity, since it does not consist only in a definite given position of the hand but also includes a special form of attention and of will power, an exercised control of movement.

Only the inner education can lead without damage to the accomplishment of these acts, and make such acquisition more or less tardy, but always within the limits of its own experience. Now this is the aid which we ought to give. We ought not to aid the child to wash and dress, etc., but we ought to help his life to reach its own destiny, its perfection. In other words to lead man to a quiet dexterity.

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Lenson 9.

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How often in the public gardens we see a misunderstood child, confided to the care of a nurse and not guided to action in an intelligent way; no matter how fine his tendencies may be he is given nothing but a toy to divert himself with, so as not to feel that stimulus of life which would lead him to perfect himself. Here we have the child seduced and betrayed. And the toys generally unbreakable, a rubber doll, a teddy bear, for the most part. Thus a thousand times a child virtually performs the actions which would break the toy were it breakable, but without perceiving that he is deceived; first because he does not see the consequences of his incapacity and is led astray from the development of his life, and second because he is led in such a way that he feels himself caressed and believes himself to be helped and favored. Here then is the friend Mephistopholes who brings temptation and death.

If the toys were breakable they would break at every thoughtless act and he would know by experience the road towards perfecting his movements. It is true that it would cost some sacrifices on our part, we would have to sacrifice the objects. And yet how many times, we repeat, we parents, teachers and humanity are ready to make the greatest sacrifices for the children, and yet if it is possible to save a plate, a toy or a glass, we do it.

And here we have a Mephistophelian greed which comes with the seduction of the devil.

When the child finds himself thus misunderstood, and unable to act according to the destiny of his life and at the same time unable to rebel because he is with kind loving people who hide his inability, he can only give vent to his rage and like a rebel become ungrateful to these benefactors. It is a common thing to think that childish wrath is a part of

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The child's character. It is said the kinder one is to a child the more he is spoilt. Thus we believe it our duty, given the character of the children to be indulgent towards them, and the most patient person is she who is most indulgent or kindly to the reactions of the angry children.

How many times the guardian of misunderstood children bears these reactions patiently and people say, "Such an one is very patient with the children," without reflecting that this is not that real patience which knows how to teach and to wait dealing one by one with all the needs of life and humbly awaiting the results. The former is the patience which tolerates the rebellion resultant on the deviations from life, from real life, as does the tempter who condones errors and anger, resultant on these deviations.

This is the road, all unperceived, to perdition which here is easily recognizable as the road of perdition because it deals with phenomena which establish themselves in the growth visibly. But this very fact remains the same in all life, and it is this very thing which leads the social classes to death by bringing them to such miserable conditions that life is impossible.

To say that we defend children from causes of death is to use strong terms for a fact seemingly unimportant but which none the less is a great fact.

But this ethical fact is the most that a teacher or a mother can learn in a short space of time, for life is so vigorous in the early years that to protect it from death is sufficient. When this aim is attained nothing more can be done and it is easy enough because our tangible action is to abstain from waiting on the children.

The question of independence is so complex that it is difficult

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Lesson 9.

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to exhaust it in a single lesson.

We have the repetition of this fact(which is so clear in the children) through the whole life of man, for instance, in the adult and in social life, because there is a tendency which may be related to the many tendencies to inertia in the universe which makes the lack of action possible; this is why man needs stimuli and the more complicated his life the more he must create stimuli around him.

In the social classes where economic social means help the attainment of life the instinct of inertia may develop: in medicine and in sociology a whole study on degeneration by the non-use of various organs exists among the rich which has its parallel among the poor by the over-use of the organs.

Here the perfection of functioning consists in that definite functioning which expends just the amount of energy required, neither more nor less.

The stomach of the under-nourished individual is weak as is that of the rich. We know that men today have poorer ^{teeth} ~~mouths~~ than in the past generation which are still weaker among the rich than among the poor, since the teeth which should naturally be used for biting are only used for masticating and as little as possible at that, so much so that in the cuisine of the rich the preparation of food consists in preparing food to be chewed as little as possible. This is the tendency to serve the teeth and the stomach and thus they degenerate because they do not work.

He who goes in a carriage is pretty well served, but he loses the ability and agility which he would have had in going on foot and crossing crowded streets.

The intellect which must work to think out the solution of the

problems of professional life is more developed than that which, to satisfy its desires, has only to ring a bell or issue an invitation. To such an extent had the rich fallen into that veritable degeneration which leads to the loss of the race, that the exercise found in sport became a necessity for the preservation of their organs. Thus on the one hand the rich are served but on the other they have to work to save themselves from death, which would inevitably follow as the result of this being served in such fashion as to lead them astray from a natural life.

Just as the stomach, teeth and nerves when they are served become feeble and suffer weakness, pain or sickness, cariousness and stomach troubles, in the same way man in being served does not use his forces as he should, so in his inner life and as regards the life of his conscience, he becomes weak, wretched and sick.

Indeed men are weak of character to the degree that part of their inner life is extinguished. Where there is a lack of skill there is an abundance of irritability. In vain are serenity and calmness sought with great effort by means of intellectual pursuits; but serenity and calm come from the fact of having developed all the inner forces. And man feels triumphant when he has developed them and weak where they do not exist.

I have in my book given an example of a skillful workman, the wise counsellor of his companions in the workshop, where he the head, in his own work is serene, calm and capable of directing others. But he is no longer so when on returning home he finds his soup is not ready, then he gets cross with his wife because he feels that the satisfaction of his need for food depends on another: he feels that the only way of attaining this aim is to compel this other person to fill his needs by dint of

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the greatest determination.

If this same man lived as the hermit who is serene in every moment of his life, who alone in his cave makes his own soup, he would have been able to bear the pangs of hunger during the time necessary to prepare his soup with the same self-control and with patient serenity.

To have developed what lies within us yields as definite virtues, self-control and calm which can be acquired in no other way.

On this topic we have social prejudices very complex and difficult of explanation which must be combatted, social prejudices which relate to good, to evil and to kindness.

What is good and what is evil? "Good is life, evil is death."

An explanation this which leaves things very much in their primitive condition. Good is not that which directly pleases us (such as getting soup from the wife, being waited on by the teacher) but that effort which impels us along the road of life. For instance the stationary position of the tables so that the disordered movements of the children may not overturn them is far removed from good which does not consist in the removal of effort but rather in the removal of all that hinders it, since it is just such effort which impels progress on the road of development and good is that which helps upwards along the road.

It is commonly said, "How good the mother is when she gets up early in the morning, bathes and dresses her five sons and puts them tidy, and who bears with them in everything." And again, "How patient such an one. She puts up with the crying of her children from morning to night without complaining." Good in this sense of the word these people are not, if we can compare them to the devil; those are good who lend a helping hand to

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life, to the inner life, and not to the individual so that it may develop and attain its final destiny.

And if the living being is a work of creation in helping creation we do God's work, and this is goodness but it never lies in serving men for this is the devil's work.

This problem was laid before Christ by the apostles when they said, "Thou art good." and he fearing that they spoke superficially answered, "One alone is good, the Father." that is to say the Creator.

All goodness lies in the mystery of creation and in the preservation of life.

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Lecture 10.

The fact of serving children was already a sort of seduction which almost imperceptibly removes one from the true paths of life, and for this very reason it represented the first step in a lesson fundamental to liberty, but in the case of our civil existence there is something less subtle, something brutal, which also acts in the same way and which is the outward sign of a sort of slavery, namely, prizes and punishments which we employ in school in order to lead children to do what we think is best for them.

Many have been the discussions by pedagogists on this question of prizes and punishments. Like the question of liberty that of prizes and punishments has been debated by almost everybody, and however much this question may seem to have been treated from different points of view there is in reality only one point from which all these theoretic questions of education start.

We can collect all these various opinions into two main groups: Those who claim that external prizes or punishments are necessary in order that the child make those sacrifices which are required of his life, and secondly those who claim that it is not

10.4. necessary to give prizes and punishments in order that children fulfill this obligation, perform this duty which is a sacrifice, but that it is necessary to lead children to do all this for an abstract reason, for good in itself, for the satisfaction there is in doing one's duty, and because of the ultimate aim of life. In short, it is a question of making a sacrifice under an immediate and material incentive or of making this sacrifice for a more or less distant ideal. The prevailing opinion is that immediate materialistic means are necessary, for the distant ideal is beyond the comprehension of a child and one cannot pretend that children do their duty for duty's sake or perform a virtuous act for virtue's sake, nor that they direct their present movements having the future in mind.

Now I say that these two different groups of ideas have essentially one and the same starting point, namely, that the child must lead a life of sacrifice, that the school represents for him the narrow road which he must follow in order to save himself, since the school would be the narrow way for the child who must become a social man, and he must follow it as it is, and in order that he tread it we give him stimuli of the same kind or prizes and punishments.

Reward and punishment have one and the same meaning, they are stimuli obliging one to follow a given road, as, for example, in trying to make a horse go they may whip him or give him sugar, it matters not which, the fact remains that they must force him to go where they wish, and these are the facts. These opinions only signify then that the child must of necessity go where we wish him to go.

It is evident that he does not wish to go that way, since all educators agree in saying that the reward or the punishment is nec=

essary in order that they go that way, either the immediate reward and punishment or the distant one, either the material or the ideal, but the fact is ever the same, the child must go where we wish him to go. They do not ask themselves if we are right in making them go where we wish, if eventually ^{children} could not take another road, their very own, which was not a road of sacrifices and along which they would not need to be urged, neither by rewards nor by punishments.

You know that in the past rewards and punishments were modified according to the form of the school. In the schools of the middle ages where the effort was greatest, and more or less natural, and consisted in memorising all that was thought useful for an individual to know, the prizes were more showy and the punishments more severe. In school pedagogical error and the rod are necessarily contemporaneous. The greater the pedagogical error the more necessary is the reward and the punishment, and the greater must be especially the severity of the punishment.

Today it is well known that prizes and punishments are becoming fewer. But how can we imagine that we can abolish rewards and punishments from a school where children of necessity become sick, have curvature of the spine, may in a great measure become near-sighted, anemic, neurotic; where the teacher in the highest percentage, taking into consideration all social conditions, even that of nurses in a tubercular sanatorium, , in the highest percentage , then, of all social conditions, is subject to tuberculosis of the lungs, because of the great effort she makes in trying to transmit something by word of mouth to those who cannot listen to her? How can we think of maintaining all this without something which forces, without rewards and

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punishments? It is impossible then to say "Let us do away with rewards and punishments" without saying "Let us destroy this form of school."

Hence, those pedagogists are right who say that it is impossible to abolish prizes and punishments in the school of today. We can, however, abolish this form of school. Both things are necessary, to transform the environment, to change the work and to have individuals follow the natural way. Certainly to solve in the abstract this question of rewards and punishments in school it is necessary first of all to abolish the school where there is so violent an effort that we are made aware of it by pedagogic and pathologic results.

So, to reason out this question, we must put ourselves in a different attitude of mind and consider opinions very different from those we have today.

If you will read the ancient works on pedagogy you will notice a form of thought profoundly different from that by which we must express ourselves, because we base ours on nature and they based theirs on an artificial fact. Since we cannot explain this artificial fact it must have a background of irrationality, and perhaps a form of ignorance which still keeps it in our midst. Let us look at what up to very recently was said on the subject of child nourishment and the opinions regarding the same. Even in the feeding of children we had at one time prizes and punishments. When, for instance, we wished the child to eat as we ate, and it happened that if the child was not hungry or refused the food which we unwisely offered him we sought to force him to eat by coaxing, by promising him a special reward, or we gave him a penalty, such as "You shall eat nothing else till you have

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~~eaten this.~~ And there were good loving parents who, having given the child his soup at noon, and it being refused, kept it and offered it to him cold at four, since the child's hunger had increased by this time. And if the child could not eat it at four, they presented it to him at night colder than ever. So hunger was the punishment.

It was known that children were very ~~fond~~ of all sweets, not so their elders. At that time there was not yet a rational diet and not all adults made much use of sugar. Children, therefore, though ~~passion-~~ately fond of it, must be deprived of it. And so one way of coaxing a child was to give him sweet stuffs, and if once he was able to get them himself and became ill from overeating, this was considered proof positive that sugar was harmful, and furthermore it was a vice, a gluttony, and it was wise to guard children from these moral defects. But, on the other hand, it was good that the child learn to eat all that his elders ate, that he should have no choice or selection, and his virtue was in being obedient. He was told "When you are grown you may choose what you wish to eat, but now you must eat what is given you." And they gave children a certain amount of wine because adults drank it and it was handy.

If the discussion were to take this form today: What then should be done when a child refuses his soup? Is he in the right? And which do you think the better plan, to promise him a piece of sugar if he will eat it, or to give it to him cold at four oclock? Would you give children sweets now and then? In answer to this we would say: We are not dealing with the same question; we have not the same grounds for discussion. I am in an entirely different sphere where all these details have been done away with. Today hygiene says what

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shall be the rational diet for children. The child fed on this rational diet must eat those things which his body needs, which nature indicates and which science has pointed out, not those things which my whim may wish to give him.

It is enough that this whim of mine be abolished and that that which nature desires, that which science dictates, be given to a child, and all these defects in the child disappear as if by magic, for the very reason that he likes what is good for him, what nature demands, and there needs be in his diet sugar which aids the tissues in their period of transformation and saccharine must be given at certain periods and in stated proportions, and no longer should we give a cold soup nor candies nor wine nor anything which creates discord between the child and the adult. Then we shall see how satisfied the child is and how much better he is in health.

We no longer think that rewards and punishments can have a place at the child's table, nor does it enter our mind that privation of food is a means of punishment, for example, we will no longer say "The naughty child must go to bed supperless," because we know that the child's physical life is sacred and such an error would be blameworthy, and when we know that science has given a precept to which is bound the life of a child, we cannot consciously break this law without committing a grave error. Thus all this physical life and its laws have been put beyond our whim. They are unique; they are absolute. And behold many problems solved, and we need waste no more time on this.

Something similar must take place in the child's psychic life. Now it is not the discussion of rewards and punishments, but the solution of a problem in psychic hygiene which we must consider.

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Everything concerning rewards and punishments in school has not only a tinge of irrationality in that it represents the stimuli and violence we inflict on the child, but also of necessity it represents a series of unjust acts which we commit against the child.

It is well known that rewards, and among these we place the giving of marks and all public recognition of merit or demerit, should create in a school, among other things, a sort of emulation by which the brighter child must drag after him the child who has not yet reached the higher plane of thought. Now the studies made today of school children already point out a number of flagrant errors. For instance, in giving the marks on a dictation, and therefore in the prizes which must eventually be given at the end of the year or of the semester, we counted only the mistakes in spelling; today it has been found from sensorial examinations that many of these errors are due to a semi-deafness. The semi-deaf, for the very reason of their less developed intellect, were put at the rear of the room, as was also the case with the less docile and less intelligent children, and thus we, with these varying marks and with prizes and punishments, in reality merely diagnosed a sensory defect. The prize given to the child of acute hearing cannot help the deaf one to hear. Here is a glaring mistake which the system of prizes and punishments cannot remedy.

Let us take gymnastics as an example of what we have just said. There are, for instance, *macroceli* children who are very swift in running because they have long legs and a short torso, and so they are first in the races, while on the other hand there are *brachiceli* children with welldeveloped torso and short legs who are not swift but have great powers of endurance. If one must serve as a model to

the other, then we should say to the macroceli "See these brachiceli children! What power of endurance they have while you tire easily! Imitate them!" And vice versa, we would say to the others "See how fast these macroceli children run, and you go so slowly! Try to follow their example!" And to urge them on still more we give the prize for fleetness to the macroceli children and of endurance to the brachiceli children.

You know that, at least till very recently, without science having called attention to this strange mingling of individuals, backward and deficient children were put in the same classes with the intelligent. There need be no illustration to make one realize at once that the backward children will be those punished in the awarding of intellectual prizes, and the intelligent ones will be those rewarded. And it is strange that backward children have been obliged to remain in class with the normal in order that normal intelligence might serve as an example and lead the deficient to make an intellectual effort to catch up with the others. It is evident that nothing is more discouraging than to have before one an unattainable ideal, an example impossible to imitate. We feel timid before a person known to be very superior to us, and the little life we have is quenched when we come in contact with such a person. In like manner deficient children remain backward, perhaps burdened with punishments, and, until recently, having to repeat the same classes over and over to no avail, and then being sent away from school.

There are among normal children some anomalous ones who are the subject of much study nowadays, nervous children, subject to various forms of nervous diseases. One form much in evidence is corea, commonly

known as St Vitus Dance, its symptoms are very evident, for the child cannot coordinate his movements, and so is always in motion. Now, when these children come to the clinics for nervous diseases, theirs is a sad story of school life, they have been severely punished because they did not obey their teacher who told them to be still.

Likewise there are epileptics with anomalies of character such as lack of will power, or normal instincts, who are in no way helped by the public schools to strengthen their inner personality, and who are only overwhelmed with punishments. Now we well know that if ever there is need of being assisted it is when one has fallen, for the very fact of falling shows one's weakness, hence we must help those who have shown a weakness, and, on the contrary, those who show their weakness clearly continue to be oppressed. But surely it is not by means of punishment that we shall remedy these different constitutions.

In the schools there are children from the different classes of society, for example, the very poor who live in unhygienic houses, sleep in the same room with many other people, hence by night they are poisoned, while by day they are underfed and often have no food at all. They get no help at home for their parents are probably illiterate and at home there is no little table at which they may study, and often no light. They come to school and of course cannot make a good showing. But the teacher, in justice, must judge only by what they can do, and so cannot reward these children, but must perhaps punish them and give the prizes to those who have better social conditions.

Many statistics have been gathered regarding children who work before going to school, for instance, those who carry and sell milk or papers, etc. And it has been found that these children are

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among the seemingly less intelligent since they reach school already tired. It is evident then that if rewards and punishments exist, together with such conditions, there exists in place of education, a form of injustice. The injustice to these children who are the biological or sociological victims of their environment is evident, but is it not equally evident in the case of the strong or fortunate, socially speaking, who are in the majority and therefore of greater interest than the others, and toward whom we must of necessity turn our attention, since the injustice done them is more or less inadvertent.

In fact, we greatly deceive these children by giving a prize from the standpoint of intelligence for surpassing the intellectually weak and from the moral side, for surpassing the unmoral child. If we do not take into consideration this state of weakness and if we allow the strong to continue to be victorious over the weak, we take from the strong one the stimulus to develop all his powers. There was, for example, in Bicetre an idiot who delighted in being the first in a race, but he did not know how to run well, so he sought to run with children, much smaller than himself and thus came out first. The idiot boy could have done exercises which would have better developed his powers of locomotion if someone had only guided him and stopped his racing with children so small in comparison to himself. If we leave him this illusion, since he has arrived first because he ran with a smaller child, we are traitors to him, we deprive him of the possibility of realizing that he has forces other than those he thinks he has, that he is less of an idiot than he seems to be and has more capacity for running than he thinks. It is these latent forces of his that we should stimulate, and

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to do this, we must rid him of this delusion.

In like manner it is very easy to seek to be the first in social life. This desire to succeed far beyond that of others is so inherent that the school need not develop it, but on the contrary, the school should develop the child's forces.

There is a story which is told to children called "The Court of the Noses," which tells of a king with an extremely long nose, who was to receive the visit of another king.

Now the king was very sensitive about this physical defect and wished to hide it from his companion, so he turned to some of his court for advice. They said to him "Let your majesty seek out in your kingdom those men who have a longer nose." And in fact, after searching through the kingdom they found several whose noses were so large and so much longer than the king's that his was insignificant in comparison, so when the other king saw him this sovereign's nose seemed of medium size.

He had seemed to have a shorter nose, but in reality it had not changed. It often happens in this world that we do not care to correct ourselves, but we wish to disguise ourselves by means of our companions. For instance, there are professors whose assistants surpass them in oratory, so they see to it that the latter have no chance to teach, or better yet, they surround themselves with persons of less oratorical ability. These professors do not try to become better orators, but, wishing to appear such, they gather around them, those who by contrast will make them appear to advantage. It is well known that those persons wishing to make their beauty apparent bring around them people of less personal beauty, etc.

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Thus in ~~all this concept there is hidden one great thought,~~
the most serious, that relating to a life which might succeed, which
has in itself great potentiality as has a normal life. The error is in
harming normal life in this way and so depriving it of the realization
of its possibilities, and obliging it to be satisfied with so little.
This is but one of the forms of tyranny. It is the same that people
be content with little or that a normal child is satisfied with being
slightly more intelligent than an imbecile, or that a moral child is
content to be thought virtuous in comparison with an unmoral child.
It is with this that we are satisfied. So it is easy to overlook an
injustice toward children, which, if pointed out, might be a means for
educating them. Certainly there is nothing more useful, morally, than
the application to school children of the science of anthropology,
which reveals all a child's physical, intellectual, moral and congenital
defects, and considers them misfortunes, something worthy of pity,
above all worthy of aid. Thus these children must be set apart from
the normal individuals, and today the feeble are led to develop all
their powers, the deficient to become intellectually similar to the
normal children of our schools, the unmoral to do no wrong after the
manner of the social man of today, and paralytics are led to move about
as awkwardly as we do.

This is a great principle, for one must say, if then, like us,
the paralytic can move about, the deficient can stand still, and the
unmoral do no harm, why then in school should we not make greater
progress? To what heights should we not attain in order to honestly
say before these; I have the prize, but I am like all the others, I
have the same strength they have, I have put forth the same intellectual
effort as the deficient child who is now similar to a normal child,

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I have had the same moral struggle as had the unmoral child who does no harm. Then indeed, all these facile virtues which are a deception must fall away. Now, prizes and punishments help to conceal this erroneous state of affairs which is more fatal to those rewarded than to those punished, to the normal than to the abnormal, to the strong than to the weak.

This question of rewards and punishments falls before another of greater magnitude, namely that of delivering humanity from an error, of putting the schools on a different basis.

We know from the experience in our Case dei Bambini that rewards and punishments are never necessary. Their aim would not be understood by the children themselves, in fact, prizes have always been refused by our children, and each time we have wished to give a material compensation it is the child who has refused it. For example, when I was giving the lesson on silence I said to the children, "Whoever comes at my call shall have a toy." I thought the children would come for the toy, and I saw instead that they scorned the toy and came in response to the calling of that voice which spoke their names. When I bethought myself to reward those who knew how to read a word by giving them a toy with which they might play as long as they wished, I perceived that the plaything was rejected and the little child sought rather to read the greatest number of words possible.

Once, when a lady wished to give a medal to the best children, those who realized they were the best, said, however, "But I don't want the medal." Now it is not that our children do not work, but they have an exactness and a remarkable constancy which even makes it possible for us to lengthen our schedule without tiring the children. Hence, no

stimulus

stimulus is necessary to make a child work and pursue a given way of development, granted that this way is normal, is according to nature, is adapted to the child and represents, one might say, a proposition in psycho hygiene;

It is necessary, then, to organize the work and to offer the child such work as is suited to his powers at that stage of his development, and which furthermore is the means necessary to his growth. For example, it is known that children from three to six years old are in a period of inner formation in which they are learning to coordinate their movements, to speak, to use their senses, etc. This is their instinct, their natural activity; to assist it and to furnish the means by which all this may develop is to help life itself. Having given this aid to life, the child hurries to it, persists in it, experiences joy from it, never fatigue, and his forces seem to multiply. On the other hand, the child resists when the work hinders him in organizing his movements, in developing his senses, etc.

Then it is that, dragging him from this natural road, and wishing to make him follow another, rewards and punishments are necessary, while on the natural road the act of self-development is the child's prize. This is not a distant prize, as some pedagogists claim, who say that a child cannot like good for goodness's sake, duty for duty's sake, nor can he make a sacrifice for this. It is not that the child does his work with an idea of the good or duty, it is not for some such dim ideal that he makes a present sacrifice, but because this work is essential to his life. The greatest harm that can be done to a child is to remove him from this normal road of development. Certainly, each one of us would be happy in the attainment of our ideal, and he who wishes to grow can have no other aim than growth, and when he grows

Anthropological Measurements.

Standing height:

Seated Height:

Weight:

Head Measurements:

(a) Circumference:

(b) Diameters: anterior posterior:

transverse:

Index of stature:

Ponderal index:

Cefalic index:

~~he is happy, and in giving him the means of growth one gives the natural way which is followed joyfully.~~

So, instead of the problem of a stimulus to oblige the accomplishment of a task unsuited to man, we have before us the far greater problem of work itself. What is the work that man can do without need of stimuli to force him to it? It is clear that here there is a great question still to be solved, but the first step in the solution of this problem regarding the work in the early years has already been solved in our school, and this beginning allows us to imagine a solution on a far vaster scale.

The child does not instinctively flee from work, but rather hastens to it, for this work is food to his inner life. It might possibly be the same in the case of man's work, one might imagine a man working in an ideal state of society as happy in his work as is the child in our school. In fact, no man tends to laziness if he is truly happy, but man's concern is to find his own work. Now to begin to organize such a form of education is perhaps to lay the foundations for a far vaster social labor, the illustration and clear conception of which would be most difficult in this day.

We see other examples in society which might be compared to this question of work, as for instance, love. Evidently it has a natural basis of life, and in normal development, has no need of rewards or punishments when it answers the aim of nature, but it happens that the prostitution of love is necessary, or thought to be necessary to society, hence slavery, reward and punishment. If work is a means unto life and is shown to be the only means for the development of the inner life, then work should always continue to be the means of existence,

of the evolution of humanity. ~~And if today man must hold himself, in spite of repugnance, to his work, we may well think that work is proscribed, that it is on the wrong road, and that it may serve the social organization, but not the life of man and its natural aims.~~

And perhaps the redemption of labor, which today is considered a purely social question; perhaps it is as vital a question of life as is the question of love.

In the Bible we find that the first condemnation of man is twofold, that of work and of love. Love and labor will remain two punishments to men and women as long as they are on the wrong path. But the fact that humanity has erred should not preclude the possibility of considering labor in its essential forms, i.e., as a means of life and its redemptive possibilities, not as a form of external redemption, but a means of redemption for the inner life of man. For it is work that develops all the powers of the inner man, and if we look upon work only as a question which refers to social life, and as a means of existence, as the economic means which must suffice the individual himself and his material needs, if we do this, I believe we place the question of labor within very limited and unnatural bounds. Man must not seek to solve the question of labor as a question in social economics, but as an inspiration to his life. It must not serve man outwardly by what it produces economically, but it must serve the inner life by producing the development of man.

This is the triumph of humanity, this is the aspiration of man, this is what man must demand of labor and what must be a means to his redemption. Every man does work which solves the question of his mere existence, but which does not aid his real life, just as the

children of our schools do not work to obtain a certain culture which once accumulated will help man in making his social position, but the child begins to develop himself by a means that can be none other than work, and work alone because it is a means of development, not because work brings some acquisition, but because the child grows by this means, just so work should continue to lead man ever forward. It is the means of evolution, of greatness, of the very redemption of humanity, in order that man may not find himself with a burden of work, but with wonderful inner activities which are his secret goal, his one aspiration, the means to his happiness, his destiny.

And today the man who reaches this destiny is a privileged being, is a man of genius, who has known how to struggle against great odds and cruel difficulties, and has finally won out and found his own individual work. Now, today, we look upon these men with envy, not because they are geniuses, since that would be vain, but we envy them only for the fact that they have been able to do what their inner life led them to do. We consider certain individuals as the poor do the rich man, who, by means of work, has accumulated great wealth. And the special complaint of the proletariat is the same as in the mind of all man who aspire to attain that which is the essential right of life, a right which we feel is downtrodden, and towards which we are all tending. Now the very workmen and men concerned in this social question feel that what seemed to be an ideal has been shattered, and scarcely had they seen the futility of this when they asked for something deeper. We still refer to work. It is not the external life, but the inner life which man desires to develop by means of work.

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LESSON XI.

ANTHROPOLOGY.

When we gathered the anthropological measurements we saw that to judge of them they had to be compared with figures which were to be found in the special tables; (constructed for this purpose) in speaking of these figures it was said that they did not represent a dogma, that is to say the absolute reality but they correspond to the average of development and that every investigator must contribute something towards the attainment of absolute figures.

Now underneath these very simple indications there are very deep questions in anthropology which I would like to set forth today no matter in how small a degree. These figures of comparison given us by the authorities and to which each one of us when he or she is an exact investigator, can contribute, represent the average. Now as you know the average is drawn from a quantity of numbers: we can use the general formula that the average equals $A + B + C + \text{an indefinite number divided by as many units as there are numbers.}$

Thus for instance if you wish to take the stature in centimeters

of one hundred children and wish to obtain the average stature of these hundred children, add together the centimeters of the statures of each of the children and divide the sum by the number of the children. Now the resultant figure is not a real figure inasmuch as it does not in this case correspond with the height of the children or at least we do not know with which of the real individuals this figure corresponds. It may be said that the average gives us an ideal of the whole, which however is not an imaginary idea insofar as this whole has been drawn from reality. Thus for example it may be said when from afar off we are looking at a chain of mountains partially covered with snow we can distinguish a line limiting the level of the snow, a line which has a real entity insofar as this chain of mountains is concerned; but when we go closer to them we see that this line which had existence at a distance no longer exists close at hand; in the same way this average does not exist in reality.

Instead when a study of biology is being made much more than in anthropology must the reality be analyzed as far as possible. For this the analysis of the average must be made, which analysis is very simple: it is a question of distributing the individuals numerically according to the various measurements obtained and from which the average is drawn. Indeed this average represents to us a single data which is a synthesis of several different datas. For instance when we say that these onehundred children have a definite average measurement, dealing, let us say, with the stature of children ten years old, an average height of 1248 millimeters or 124 centimeters, then we can imagine that there were children who measured 1120 cm others who measured 128 cm and others who measured various intermediate measures; then to see how these individuals are distributed numerically ac=

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According to these measurements we must proceed as follows; make a series of the figures obtained. Thus 119, 120, 121, etc. up to 128 as the last and then see how many of these hundred children are found to correspond to this first measurement 119, then corresponding to 120 and so on down the line.

This is called making the series of figures; it is also called analysing an average, and in this case we have a reality which corresponds to these figures inasmuch as there are individuals in this definite number who really measure a stature such as is noted here.

When we say that the average measurement at ten years of age is 1248 millimeters we give no idea of the variations from this measurement, that is to say what can be the smallest and the greatest measurements of these individuals who being within the limits of normality vary however from this figure which is the average, since the average figure is derived from a number of normal individuals, but does not give the individual differences. Instead this series gives us besides the manner in which individuals in relation to a certain figure are numerically distributed, also the limits of variation possible in the model relative to this measurement at this age, that is in this definite biological condition.

You see how all this is synthetical. This indeed is enough to make one smile and perhaps it really does make one smile; however it is a question of data which correspond to a biological fact, to a fact of life. You remember that morphology is, if one may say so, the exponent of life as shown externally by the body since the mass of the matter has a definite destiny which it shows in the form to be attained, which attainment is subject to laws; and certainly the way to get to the bottom of the great biological problems is to find a simple data such as makes us smile.

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Let us take the smooth road without difficulties which however assures us of truth; only then can we travel far in the interpretation of facts and laws. If however we were mathematicians and should scorn simple theories thinking the arithmetical operation in this case is simple and not the thing measured this slight error might carry us past the road leading to the solution of great problems without our seeing it. Then we may also conclude that whoever wishes to study life, contemplated from no matter what viewpoint, must follow the road of truth no matter how simple it may appear.

Indeed anthropology and also today biology, zoology and botany all biology has an immense field of study in these simple things which I have just indicated; and in our case from the contemplation of series of figures, the anthropologists have begun to discover laws and then to study them, since the numerical distribution of the individuals in relation to the measurements is not accidental but follows also a fixed rule, hence a law and to be exact this law; the number of individuals in relation to the extreme figures is very scarce as compared with the number of individuals in relation to the average figures. Indeed if we look at the extreme measurements we understand a priori that the people who have extreme measurements are numerically scarcer than those who have the average figures. And yet why do we not smile at this? Not because the matter ought not to be gone deeper into but because this phenomenon is so evident, because people are so much like one another that all approach this average figure. And if experience has not revealed this to us? Let us suppose it has not revealed it to us: then the phenomena would impress us greatly.

To give an example of the numerical distribution of individuals

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according to the figures relative to stature I will copy these figures which relate to the number of individuals in relation to the height then for an extreme measure we can imagine the stature 1.45 meter for the individual

1. Then corresponding to the smallest measurements there are 12 individuals, then 66 individuals, then 220, then 495, then 792, then 924. After this number of individuals the number begins to diminish a second time and we have 792 individuals and then 495 individuals, hence come the corresponding figures which are above 220, 66, 12, 1.

There will be an average stature for instance of 1.66 meters, relative to which there is a maximum number of individuals, then there are higher statures, as of 1.67, 1.68; etc., relative to which there is a smaller number of individuals; vice versa there are the measurements which are smaller such as 1.65, 1.64; etc., relative to which there is a smaller number of individuals and there is the greatest number in relation to this stature represented by the figure 924, thus

Individuals	Stature
1	1.72
12	1.71
66	1.70
220	1.69
495	1.68
792	1.67
924	1.66
792	1.65
495	1.64
220	1.63
66	1.62
12	1.61
1	1.60

To calculate the average measurement of all these individuals as regards stature, the number of individuals must be multiplied by the relative stature; add up all this and then divide by the number of the individuals

uals.

But you understand that if there is an average measurement and then there are individuals who are distributed symmetrically above and below this measurement this figure here in the middle (924) is the same as the average because this figure must be augmented and diminished by the same quantity so that it remains identical. Then when the distribution of the individuals is thus symmetrical this figure is the ~~median~~ median insofar as it coincides with the arithmetical average of all the statures in this case.

However here are 924 individuals who really have the average height the others who do not possess it diverge from it by exceeding it or by not attaining it; those who either exceed or fail to attain it but are near the average are more in number than those who diverge from it by greatly exceeding it or are far from attaining it to the point of eccentricity. And then this figure which was not an actuality, this average is absolutely exact for many people.

You understand that if we could measure a man with very exact instruments which could give us the millimeter of stature and we should make this distribution we should see that many people would have corresponded to the millimeter. How many? The greater number. Thus there is a tendency in this group of individuals to reach the measurement which is determined with absolute precision, when it is a question of a mixture of normal individuals who are on an equality as to biological conditions (race, sex, age, etc.) and then the greater number of triumphant people really attain to this mysterious destiny. It may be said that the group of individuals in which there is a preponderance of conquerors in this strife of nature, is normal. This would be the average measure which is a middle measurement which is real as

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destiny and which is attained by the greater number of normal individuals.

From the fact that you found what happened in this line when I began to speak of the series so simple you can understand that not only height but whatsoever the measurement the same phenomenon takes place; that is distributing these measures in series there is a like distribution of individuals; and no matter what the measurements are, whether the width of the eyes, the length of the nostrils, the width of the nostrils, the width of the teeth, and not to mention the large measures, it is always the same, not alone in man but also amongst the animals and the plants.

You know, for instance, that cocks have a kind of atrophied toe at the back of the foot and the same in the hens: even taking the measure of this toe the same phenomenon occurs. In a series of flowers we wish to measure the length and width of the petals. It is always the same phenomenon

This distribution is characteristic even if it does not always have this exactness of proportion which I have pointed out; for it is not stated that the number of individuals who fall below this measurement must be identical with the number of individuals who exceed this measurement; therefore, you can understand that measuring a certain number of individuals and limiting our researches to a definite number of people we have not chosen this collection of people so that it should represent the precise mixture of the whole mass of people, and it may be found that among the individuals we have measured there may exist just these proportions; to know this what must we do? We must augment our researches measuring an always larger number of people, and then it will prove that measuring an always greater number of individuals, that if there was this species of

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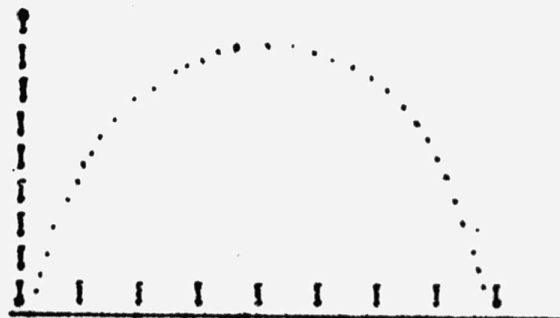
12.8.

lack in proportion, this lack will go on filling up and by continuing tirelessly in measure we will see this void completely filled up, that is, we shall have this exact proportion in the distribution of the individuals.

Thus it has been possible to measure as many as two hundred thousand people and to attain this also. But, you will say, "How can one possibly measure two hundred thousand people?" As many investigators as know how to measure in this exact scientific manner can be employed to measure the two hundred thousand people. For this reason in experimental sciences the method must serve as guide and in congresses the most rigorous morality exists among the investigators so that all the investigators act as a single investigator; and that is why if we become exact investigators we shall be able to contribute to the researches for the truth.

Here then with the scientific method and granted the large number of investigators this fact has been definitely established.

If instead of with figures we wish to represent this phenomenon by a diagram for instance as here shown, these two co-ordinates give many equal divisions and here on the line of the abscissas are marked the figures relative to the measurement and here the number of individuals measured it has a symmetrical curve equal in the two parts; and the greatest height of this curve should correspond to this measurement which represents the average of all the measurements marked here then this will be the median which represents the average of the figures.



This is called the curve of Quetelet or the binomial curve of

11.0.

Newton, ~~because the coefficients of the binomial of Newton admit of this~~ numerical symmetry; and of Quételet because the first to make these studies on man was the great Belgian statistician Quételet.

This fact, then, is simple. You understand that if these extreme measures are far from each other, for instance, the variations of the stature of the adult man are from 1.45 to 1.99 there is a heterogeneous mixture of individuals for if this mixture were very homogeneous, for instance if all the individuals dealt with were of a definite race, of certain social conditions, etc. the variations would be small. It may be said that these individuals may vary in stature from 1.60 to 1.66. Suppose that it is so, that there is a heterogeneous mixture of individuals, and suppose that the statures be taken among rich people and among poor or among women and men, then to analyze this curve we can divide, that is to say analyze the mass of individuals who were used by us to construct this curve and measure separately rich and poor, or women and men. Here then are two measurements, one greater and one lesser, and if it is a matter of rich and poor we have instead of one curve two curves which have the same limits of extreme variations that they had before, the law is the same and the stature of the poor varies in the same measure as the stature of the rich; or if women and men are dealt with the stature of the women varies in like proportion to that of the men in the distribution. In the case of the poor it may be said that all are a little smaller because the poor have not been able to attain to the stature of the rich, but diminishing a little they have come to represent the very same distribution of individuals, that is to say, giving us a general view of the very same law.

11,10.

I repeat, this fact is simple, so simple, because for us it is experimental.

~~And as the simplicity of the manner of proceeding in the averages~~ made us smile and made us pass by the right road of biological analysis without seeing it, thus sometimes the fact of being present at an experiment diverts us from the recognition of an important fact simply because this fact is experimental.

For instance, none of us are astonished that men are born because men are born continually, but are very much astonished by a small thing which may not be as simple as this, and we say that it is a miracle because we have no experience of it. Probably what we call miracles are much less important matters than the entry into the world of a man who previously did not exist, but as we are accustomed by experience to see this great miracle we do not realize that it is such.

This is why it is necessary to have a certain mental education, a preparation for observation, which is not the method, for instance, consisting in the use of a definite instrument, because this method can only lead us to become scientific workmen and to give to science a contribution; but a special preparation of the mind is necessary which might be called the preparation for simplicity which bears us along the road of discovery.

It may be said "Blessed are the simple in heart for they shall see God," those to whom when it is said "Do you know the great miracle? A man is born," are astonished at it, whilst he who would answer "What of that? It happens every day," would not be simple.

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It seems such a natural thing, and yet this is the road of discovery and this spirit of simplicity is the scientific spirit.

Now I was saying in this consists the demonstration of a destiny in the attainment of the limits of form. When we say that these figures are not a dogma and that the contribution of the investigators can perfect it, we are stating a real fact, but in the meanwhile all this explains it to us. Up to what point can it be perfected? Illimitably or is there a limit? Is there a finality which can be called the truth, the dogma? Certainly there is when this symmetry is complete. If we should say There is then an absolute destiny of life, even in its morphology, there is a predetermined absolute, it exists ~~and~~ is this, then when we, measuring an immense number of men, succeed in enlarging our researches and in attaining symmetry, we should touch that finality and that truth.

This problem which may seem idealistic may be set: To what morphological destiny should a man perfectly conceived and evolved attain? To this one: If in the procreation, if in the evolution there were no errors what morphological destiny would be attained? This destiny would be attained.

Hence we have solved a problem, hence there is a mysterious quid in life never attained in reality which we can measure, fix and say "This is the model, the average, and we may say the normal." When it is stated what a normal man should be, this is the problem, and its solution must be thus. Quételet with this arithmetical procedure which makes us smile desired to make too high a flight and to decide what was the divine idea of the creator and to measure it and to say "This is man as conceived by God;" and this he did, so that in the nineteenth century

11,12.

in which the analytical study of anatomy depends on the analytical study of morphology, on the analytical interpretation of the species according to Lamarck and according to Darwin, and so it came about that this great idea was trampled down, not because it was not based on positive researches but because the author desired to take such a leap in a period in which God was outside science.

This also I should like to say is one of the errors of our mind which carries us far from discovery when it is difficult to separate the object from the subject, and the object and the subject give our individual preconception, because in such a case confusion ensues and it is in a kind of labyrinth that the possibilities of discovery are lost. For instance, all these great positivists, from the fact that they had a preconception given by Darwin and from the fact that Quétélét had leaped to God, had for thirty years left to perish fundamental material which today represents the modern road of science, biometry, by means of which advance is made in all biology, botany, zoology, and anthropology, that is, the positive study of living reality and the study of mathematics applied to it.

Indeed through this mistake, through this confusion of object, subject, and individual, through this confusion, it appears more positive, more true, and the demonstration more completely proved, that man comes from the ape (although no one has ever seen this thing), than the mathematical study of measuring living individuals, , than the study of mathematics which is the most positive the human mind has been able to organize. Now this model, which may be called the model of charity, to know how to select the food, putting aside the individual and our convictions, this forms

11, 13.

part of the scientific spirit. He who had been charitable, even granting that Quételét had taken a great jump, might have followed his path, his good path, and would have arrived thirty years ahead on that road on which, owing to these preconceptions he arrived thirty years later.

There is a legend often told the children which tells that there was once a dead dog lying in the street and those passing near him said "How horrible, why did he die, why did he perish, why is his coat all destroyed?" Someone who was passing by said instead "What beautiful teeth this dog has;" The people wondered and then it turned out that this passer-by who had the power of seeing the little beauty which did exist there where to others only ugliness and their own repugnance existed, this passer-by was Christ. Now I repeat this spirit of knowing how to pick out the truth from a collection of facts, knowing how to forget oneself, what we call charity, together with simplicity, forms the spirit of those who in science are the teachers, who discover the new things. Without this they could be studious people who; although studying and giving their whole strength to it, cannot by a millimeter remove themselves from the grade of scientific workmen who may be consistent workmen of an erroneous period of science, hence faulty workmen.

Then in conclusion there are morphological destinies which we can decide by means of the average. You see how great is the field. Normality may be defined. Think for how long a time we sought after irregularities, after the study of irregularities, for instances in man, after the study of degeneration, the study of morphologic stimuli which are an external sign of degeneration, which represent deviations from the normal, and sciences are founded on this, and the normal was not

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11, 14.

discovered. For this reason today in positive science the field of irregularities has been to a great extent abandoned, because the field of normality spreads before us its possibilities of attainment in regard to the positive study of figures. Then this figure is the average figure and represents the average normal measurement. He who has not this exact measurement deviates; if near the average then we have, as it were, the jargon which represents the relic of past language, that is to say, those individuals who are near the average are paracentric, and those far from the average are eccentric, but only a single one has conquered, for the average measure is a single measure.

You will say that no one can attain to this measurement, on the contrary, as you have seen, the greater number of people do attain to it, thus the character of this average is determined by the quantity and by the numerical preponderance of the real individuals.

Thus we might delude ourselves as to being in a normal preponderance; but this fact is not experimental, because instead we know that we are full of defects and that in relation to one measurement there is a preponderance of individuals as in relation to another measurement there is a preponderance of other individuals. Proceeding to analysis it is seen that it is not the same individuals who predominate in the same measurements, some predominate in one, some in another, and some in still another, and in every measurement new people are seen to place themselves in this determined part, and others who being first in the center are seen to have been obliged to more or less remove themselves from it. We are thinking of people who have the average measurements but a nose longer or shorter and so on.

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11,15.

Thus it may be that in point of stature two individuals are abnormal by the fact of too long a body or by having too long legs, and yet we have always the means of determining the normal man.

What would be the ideally normal man? He who was in the middle as regards all the measurements. But this is an imaginary man. Instead there exist individuals who for a large number of measurements are in the middle and other individuals who for a few measurements are in the middle. Thus we may say those persons who are in the middle, as the average measurements for a large number of measurements are they who approach the ideally normal and vice versa.

These are the most interesting studies of our days. Here in Italy a young scientist, Viola by name, has confined himself almost entirely to these studies and has found out that exceptional people who have the largest number of average measurements appear beautiful to us and are beautiful. Then it may be said that these men have attained this sole predestined truth more than the others and that they represent the triumph of nature's aim. And when this triumph of nature is before us we are much moved by it and have esthetic enjoyment, and feeling the beauty or the truth of nature which has produced this great emotion in us, we have called it beautiful.

In this case beauty is an absolute, there cannot be beauty according to the taste of one person and lack of beauty according to the taste of another. Beauty would then be subject to the caprice of the individual and indeed to individual bad taste. Those without education in observation and those who have not in any way attained refinement of the senses cannot be judges of beauty; but mathematics is the judge of beauty. If we allow that what mathematics tells us is absolute beauty,

11,16,

then we can have the privilege of certain special enjoyments, that is to say, of enjoying the triumphs of nature. Indeed, if it is a question of educating the recognition of beauty we have a well-defined path and we ought to lead people, if it is possible, to be stirred only when face to face with this beauty. Which? One? There is no other truth, no other beauty; all other beauty is individual caprice which must disappear.

Let us for instance turn to art; in art beauty is much spoken of but without defining it. There has been much following the guidance of certain famous artists whose works produce in us an esthetic emotion, perhaps not exactly in us, but in a certain number of individuals, and we have agreed that they were right, just as the scholars agree that the teacher is right. An individual, an artist, has traced this opinion of beauty, it is not the absolute which has offered guarantees of reality in the appreciation of beauty.

There are two authorities much esteemed, Botticelli and Rubens; Botticelli was impressed by the faces of the microcephalic (small-headed) individuals who have small bodies as compared to their length of limb and who are predisposed to tuberculosis, to be parasites, etc. Rubens, on the contrary, was impressed by the other disharmony, which consists in having the torso overdeveloped as compared to the lower limbs; in this extreme are found the individuals suffering from diseases of the heart and liver and predisposed to apoplexy. The Botticelli types are those who are today recognized by science as people of small appetite, able to work but little, thin, transparent, and being dreamers rather than workers. The Rubens types are robust, workers, dedicated to debauchery, and the pleasures of the table. We see these two artists idealizing these types. The Botticelli faces are only capable of throwing flowers, of

11, 12.

walking on the grass, they are adapted for the decoration of the drawing rooms where there is much talking and no conclusions arrived at; those of Rubens, on the other hand, are types of debauched gluttons whom we quickly place in the diningrooms.

And yet we say that both are beautiful and we find students who desire to follow the school of Botticelli and students who desire to follow the school of Rubens. These, however, are not students but degenerates. These founders of schools never make artists but degenerates. Why? Because students must strive to find beauty in what another person exalts as beautiful, whilst a perpetual spring is needful for the nourishment of the students. The master must have found truth to have an army of real followers.

Now one of the most interesting modern studies is that of the comparison of what anthropology calls average measures with the Greek statues and it has been discovered that the Greek statues have average measurements. Thus the Greeks in art followed truth and not imagination. They observed the living man who certainly must have lived in excellent physical conditions, such as to permit of a preponderance of development of the average measurements, and then these men permitted of being artists they were neither covered nor deformed so that the human form could never be seen. Why perforce esthetic education in human beauty if beautiful things do not exist, or if they do exist but cannot be seen. Undoubtedly it is a great illusion that artistic taste can be formed by an artist looking at a model, granting that perfect models do not exist.

How do we today form the appreciation of beauty in the artists? Just as in the schools we form the ideas of the scholars. We say this one and this one were masters; they sought beauty and therefore this must

11,18.

be beauty. We cannot give a positive education in beauty, we do not have it, that is to say, we do not allow that esthetic sensitiveness to develop in the individual which would permit the individual to select the beautiful, to distinguish the beautiful from the ugly, as did the Greek artists who had in their eyes and in their souls the same sensitiveness as the anthropologists of today possess with their instruments perfected to the millimeter, measuring hundreds of men, even to two hundred thousand individuals, so as to get this average figure.

The esthetic sense can be educated to the point that with one look an individual can understand, this is beautiful, this not; and separate the beautiful from the ugly even in a single individual, and distinguish in the whole between the ugly and the beautiful.

Now the Greek ideal was reality. Their beautiful was the true, and today science has measured it and has defined it by means of mathematics, and, indeed, this is an art which throughout the centuries is still master and sole master, because truth is absolute and only the absolute is truth. Then esthetic education, aided thus by science, should be given to prevent people from following capriciously and imaginatively every sensation of other individuals, but that they should remain rooted in truth, making themselves capable of grasping and experiencing those grand emotions which were certainly experienced by the Greek artists, emotions higher than those experienced by Rubens and Botticelli. And then we, in the education of the new generations, should not so much render the imagination and the fancy subtle, but rather ground men in the truth, knowing that from truth comes the absolute in all great things. For instance, the beautiful is certainly the good, realizing that in urging individuals to follow fantasy or imagination or a human

11,19.

master, we are substituting the caprices of an individual for the grandeur of nature.

Indeed we snatch man, man who solves the most obscure problems, from the road by which as Gaetelét said man succeeds in reaching God, the mystery of nature, and instead we see him content to follow another man, to degenerate under a master who is not rooted in truth.

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Lecture 12.

The lessons which have preceded this one treated of the liberty of the child in school according to our method. We understand this liberty, not as an external liberty, but rather an inner liberty, since we hold that the child should be free to develop himself in the best possible manner. This conception that liberty consists in being able to perfect oneself, in being able to develop the finalities of life inherent in man, is, indeed, the fundamental concept of every form of liberty. Nations, too, when they have gained new liberties, have the ability to advance further in civil progress. The same concept should be had of liberty taken in this pedagogical sense. Except that here, treating of a child in the formative period, we should consider liberty in the sense that the child may be free to perfect himself, to attain to the finality of his life.

Now this principle is not new for in the physical life it already exists together with the development of a science, for example, the science of child hygiene, which today makes it possible for a child to develop his body much better than formerly. This science not only allows the race to attain its highest physical beauty better than in the past, but it diminishes in a great measure infantile maladies and infant

12,2.

mortality, however, this concept has not as yet been applied to the psychic development of the child. That is to say, a science which considers this problem of granting the child such conditions that his psychic growth may be facilitated and that man may also attain psychically to those finalities inherent in his nature, it is this which, as a positive science of the same order as the other positive science referring to the body, has not as yet arisen.

We may truly say that child hygiene, which has given to the body what we can call physical liberty, since it has permitted the child to better develop his life, could also be represented externally by certain modalities: for example, the child's clothing has been changed and with this change his movements are externally freer, his life has been changed in that he is left in the open air, and in this sense it is also a material liberty since the child has a greater space in which to move about. But alimentation is the main force in this whole progress of physical hygiene. We might say that this is really the part scientifically studied, established and practically made law. So for the psychic life we might make a perfect parallel with the results attained in the physical life, and remaining in the school environment in which the psychic life of the child develops we might say that along with the freedom of dress we should place a freer school environment in which the child can expand at liberty, hence the possibility of a child's going from place to place, of having several rooms at his disposal, a garden, etc. etc. And alongside of the physical fact that the child in the open air has more room, breathes more freely, and also experiences a physical freedom we can place the other reforms of psychic life inaug-

12,3.

urated by our method consisting in the modification of personality of the teacher. This teaching teacher whom we wish to abolish might be compared to the walls which hinder the child in breathing, because the teacher who imposes his ideas in a more or less violent manner, however much hidden by love, represents walls which, so to speak, keep the child from breathing freely, from assimilating his spiritual nourishment. But that which is more scientific, more profound, which perhaps will reveal laws, that which represents that part of positive science which can be measured, which can be established within definite bounds, which can be compared to alimentation, that is the educational method. Now the method of education considered in such a way that the child need not learn something a teacher teaches but that he can develop without a teacher who thrusts himself on the child, such a method cannot be like any other.

In fact our method might be synthetically termed a labor organization. The child must develop himself freely through his own work. To organize this work, to give him that work which will permit his psychic development; that is essentially the method, aside from the many modalities in the presentation of this material.

The conditions referring to the presentation of this material and to the organization of the work must be determined, for it would be a mistake to think that any work whatsoever will attract the attention of a child in such a way as to cause him to persist in the exercise until it has helped in the development of his inner forces. Why, this work should almost go out to meet the inspiration and the spiritual needs of the child.

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12,4.

Certainly the child's purpose is to grow and to establish certain functions as yet not fixed, for example, in the first years the function of language, the organization and coordination of movements, the development of the senses. Through this development of the senses the child, who seems a pilgrim on his first visit to the world, must get into contact with the external world and almost take nutriment from this contact with the world; he must develop his ideas, his imagination and his reasoning powers.

But this is not something which we are to impose from without, but something which must develop of itself and which does develop of itself. The child is famishing spiritually for all this and if this material for inner nourishment is not given to him he goes in search of it.

It is well known that children touch everything, they are always moving about, and no one can stop them. This handling of everything is a manifestation of their need of developing the tactile and the muscular senses, of coordinating their movements. If, by a special method we do not give a series of stimuli well adapted to assist this development, the child of his own accord looks for stimuli in his environment by a series of efforts, of errors by which much harm is done to the child's psychic personality just as much harm was done to the child's body when, though having the stimulus of feeding himself, he was nourished haphazard and badly nourished. Indeed, all the progress of hygiene is summed up in the fact that the child be nourished according to his physiological needs. The progress of pedagogy will consist in this: that the child be fed spiritually according to his

12, 5.

natural psychological needs. Then pedagogy must be based on psychology as hygiene is founded on physiology, but, just as infant physiology was really known only after the development of the positive sciences which indeed made known the laws of hygiene and sprang up as a real positive science almost side by side with hygiene itself, just so the true knowledge of infant psychology which, perhaps mistakenly we think we have today as in former times we thought to have intuitively the knowledge of child physiology just so infant psychology will be known to us when we are given the opportunity of making positive studies in child psychology by the application of a rational method like to that of hygiene.

Now to pass from these general principles to practice, to explain some of these ideas, we can ask what then must be done in a practical case in order to initiate this work which does not rest upon established laws, but which is trying to establish them, aspiring to the form which would be a positive form analogous to that of other sciences. Let us begin with the fundamental differences which must exist between the schools which spring up with this new ideal and those which have the old ideal. Those of the old ideal presume to instruct the child by leading him toward a goal which was the educator's goal, hence the teacher was obliged to attract the child's attention in order that he listen to and learn what the master wished to teach him. And to this end there existed the teacher who talks and teaches and who therefore is undoubtedly guided by her studies, having a certain pedagogic culture, for example, the substance of what is to be taught, some notions of empiric psychology, and an art, the art of making oneself listened to, which is

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12, 6.

truly an art. And this seems a great progress compared to former times, when violence was used and the child had to listen urged on by punishment if not by love.

With our method however we exclude this fact and allow the child to exercise himself. What should the teacher do when she wishes a child to work of his own accord? What should her presence be? What manner of lesson? Her lesson should almost always consist in silence. Then the key to the understanding of this difference is precisely in the manner of giving a lesson and it is this which marks the two roads going in opposite directions.

Ardigo, who is a great philosopher and understands the old method says, "The art of teaching consists mainly in this; in knowing up to what point and in what way one may keep a pupil's attention. The ablest teachers are those who never overtire any one portion of their pupils' brain, so that their attention turning now here and now there gains repose and with renewed strength returns to the main argument of the discourse. Let us give an example of a lesson given to demonstrate the art of attracting the child's attention to a subject chosen by the teacher. Such lessons generally demand much preparation just because they try to accomplish something thought to be difficult to hold the attention of all the scholars."

I choose a lesson which was awarded a prize at the Italian national competitive contests open to the best teachers of childhood. Here we have a lesson in which the teacher desires to show the difference between cold and hot. At the head of her theme she states what she expects to demonstrate and says: "I limit myself to this. The apprehension of the idea of icy cold in comparison with that of heat, and that is enough! For

12, 7.

ideas are not cigar stubs to be tried one after the other but sublime ~~psychic facts of great complexity~~ and therefore, most difficult of assimilation. " Then she adds, " I set before myself also the task of associating with the idea to be imparted the cultivation of a sense of comparison for the poor to whom winter brings much suffering."

This is her theme. And now turning to the children she begins:

"Children how comfortable we are here! Everything is clean, everything in place, I like you so much and you like me; is not that so, children?" Answer, "Yes, Yes;" then she adds: "We are really very comfortable here! Over there in the corner is something which sends out so much ." Children: " Heat. It is the stove. " ~~But~~ But outside where there is no stove, there is no heat." Children: "It is cold." Teacher: "Last night while we slept, while possibly your mother mended your clothes—— dear good mother! Last night softly, softly there fell from on high many, many white flakes. " "The snow, the snow!" exclaim the little ones. Teacher: "Children let us say, a great many flakes of snow fell. How beautiful the snow is! Shall we go and see it from nearby?" Children: "Yes, yes, but it is so beautiful, we will want to take some." Teacher: " And are you not allowed to take it? To whom does the snow belong? (No answer) Who has bought it? Who made it? You? No. I? No. Your mother? No. Did your father buy it? (They look at me in astonishment for these are strange questions.) No. Then the snow belongs to everybody. And if that is the case we can take a handful. (Signs of joy) I will give out at once (the children haven't a box in which to keep their material) the little boxes you made yesterday. (Better means for having them comprehend the usefulness of work). They will will hold the snow. (While I act I talk so as not to let their attention

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waver). I will also take mine, which I made with you; it is larger than your and so which will hold more snow, mine or yours? " Children: "Yours." Teacher: " Let us go, a nice white handful will go into your boxes. What a delight! (They all start out) . Let us stop a moment; How comfortable we are in, here! Let us put a hand on our faces. How warm the face is, and how warm the hand! Let us see if when the hand has touched the snow it will still be warm." Children: "It will be cold." Teacher: "Of course. (going out) How beautiful it is! It fell from above, heaven has given the earth a magnificent robe all --" Children: " White".

At this point my children, having been habitually entrusted to that principle of ~~serene~~ ordered liberty which is of greatest value in the formation of character, touch and pick up the snow and some break the crust in the form of a design. I let them alone. It is only a minute, for I quickly call back their attention. Teacher: "Children, I too, want to take some snow, but together with you. Still! Erect! Look at me. Let us take away a little piece of the great robe! Let us put it in our boxes. Done! (Re-entry) Oh, how cold! The children who are coldest are those least well clothed, poor little ones! And those who at home have not that thing full of coal." Children. " The stove." Teacher: " How cold they must be! Go up quickly, quickly, all to your seats. Put the box on your desk. How cold the snow is! Have you noticed how cold it has made your hand which was warm? " Children: " Mine is cold, so is mine!"

This lesson should have aimed to teach the difference between hot and cold. Evidently the teacher thought that it was so difficult to give this idea that she needed not only, a long and complicated thought, bristling with diverse ideas and with actions, (such as to really draw

12, 9.

from that one point), but she also thought it necessary to give a series of conditions so as to hold the child's attention.

Now this is one of the general method used in our schools for imparting knowledge, i.e; to amuse the child, to attract him, often to stimulate his curiosity, hence to make him guess the things, all this really results in drawing his attention farther away from the object.

Another method in use today in the common schools is that of respecting to a certain degree, or rather of professing to respect, the child's spontaneity, of, however, guiding him to express himself and to think as does the master, but without imposing this as an obligation though leading him by false paths. And this method which is especially developed in Germany is illustrated by Tolstoy in one of his pedagogical works in which he quotes a lesson he attended in Berlin.

He says "A professor in a German school, educated in the best methods. Calm and assured of himself he sits in class, his materials are ready, little cards with letters, pictures, a book with the picture of a fish. The master looks at the pupils, he already knows all that they must learn, he knows of what their mind is formed and many other things which he learned at school. He opens the book and shows the fish. 'My dear children, what is this?' The children rejoice on seeing the fish, if they have not already known what it is they have heard it from the other pupils or from their older brothers. With all their might they answer 'A fish.' 'No,' says the professor. 'What then do you see?' Children are quiet. 'What do you see?' 'A book,' says the most ignorant. Meanwhile all the intelligent ones have asked themselves over and over what it is they see. They feel they can never guess what the professor demands and that this fish is not a fish but something

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which they do not know. 'Yes, yes,' said the teacher, very good, 'a book, and then?' The wiser ones take courage. The foolish one does not know why he is being complimented. 'And what is in the book?' The wisest guess 'Letters.' 'No, not at all,' said the teacher. 'You must think before speaking. What is there?' 'A fish' says one bold one. 'Yes, a fish, but is it living?' 'No, not living.' 'Very good, is it dead?' 'No, not dead, then! what is this fish?' 'A picture.' 'Good, a picture.' They all repeat it and think the lesson over. No, they must still say that it is a picture which represents a fish. And in the same way he obtains from them that it is a picture representing a fish. He thinks his pupils can reason and does not imagine that if he obliges his pupils to learn to say that it is a picture representing a fish, it would be far simpler to have them learn this extraordinary formula by heart.3

Now, Tolstoy asks what is the need of all this reasoning to lead the pupils to say that this is a picture which represents a fish? Could not the teacher with greater simplicity have said "Children, this is a picture which represents a fish?" But then he would have imposed himself on the children by saying "This is a picture which represents a fish," and it would not have been the children, who, by a voluntary and intelligent effort, succeeded in saying what the master wished. And this is the aim of the method.

And we, on the other hand, how do we give the lesson in a similar case? For example, we wish to give the idea of hot and cold. We can take objects which cannot give sensations other than the thermic or tactile, that is, which in themselves do not represent anything but

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which have a different temperature, as for example, rubber bags, one of which may be hot, the other cold. We have the child touch the hot one and we say to him: "This is hot;" we have him touch the cold and we say "This is cold." And the lesson is ended. It is true that we afterwards want to find out whether by this short road we have succeeded in making the child understand us and so we ask him as another step "Which is the hot?" He feels them, finds the hot, and stops. Good, he has understood. "And which is the cold?" And the child feels and finds the cold. Then we are persuaded that our lesson has been efficacious.

But perhaps the lesson has not been successful, for sometimes the child has not followed us, or is not capable of understanding. In which case he would have been still less able to follow a long discourse tending to give him an idea of hot and cold.

As a third step, the last in our lesson, we wish the child to associate an accurate name, a certain word with this new acquisition of his, and we say to him "Tell me, then, what is this?" And he should answer Hot or Cold if he remembers the word. Then he has had a clear perception of the fact we have wished to give him and the aim has been attained, the lesson has its bounds, its "raison d'etre", its efficiency.

We proceed similarly in other cases, for example, we are treating of rough and smooth surfaces. We offer a rough surface to their touch and say "This is rough;" we have them feel a smooth surface and say "This is smooth."

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~~Do we wish to show them the difference between a large and a small~~
object? We show them a large object and a small one, then we say:
This is large, This is small.

Do we wish to have them know the difference between thick and thin?
We take two objects which are of equal length but differ in thickness and
presenting them we say: This object is thick, this one is thin. In
like manner we would say: Such an object is long, such an one is short,
etc.

Do we wish to give an idea of the difference of colors, for ex-
ample, of blue and red? We show them the color blue and we say: This
is blue, and we show them the red and say: This is red.

Lessons of this kind last only a second. They certainly cause a
teacher of the common method to smile and say "Is this a lesson?"
But we could make reply, Do you not attain your aim thus? Yes? Well,
then it is a lesson. Then the teacher answers: "Then we are no longer
teachers; we have nothing to do." And it is true as teachers they have
had a mission which is now on the way to disappear from the school, but
it is not that they have nothing to do.

The objection might be raised; but then a school of this kind is
a school of laziness for the children learn in an instant. Or else
there will be so many lessons that a thousand concepts must be given
on the same day.

When a teacher has accomplished this, her first task, of giving
the child the idea she desired to give, she leaves with him a didactic
material which represents many times over the idea she has given and
she leaves the child to himself. Then we see a fact which is a natural

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phenomenon, the child exercises himself for a long while on this didactic material.

How long? Right here is where we must put ourselves in a different attitude from that of the teachers of one time; we must become observers and observe how long a child persists in these exercises, and then we shall see that some children repeat the same exercise two hundred times, others forty, and others only ten times. Thus we notice an individual difference, individual tendencies, and with wonder and emotion we notice this fact: That giving a lesson within these limits almost do we stimulate and coordinate an inner activity which already exists in the child and which we need not give; that is, we should not entice the child into doing something, but should leave him free to complete the exercise for which he has a tendency at that moment, in that age, according to the needs of his psychic life. And thus the child perfects himself.

Often the children return for three or four days or even a week to the same exercise, and then we perceive that not only did we give a very short lesson of a second, but that this short lesson suffices for a week, and sometimes for fifteen days of work. Then for fifteen days it is as if this child did not exist for the teacher, yet he has coordinated his activities and is exercising them, and during these fifteen days he does not rest, but works according to his natural laws.

It is thus that these small children make this progress which seems so wonderful, but is not so, because it is only a result of the liberty which the child has in exercising himself.

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With the methods in general use teachers must very often correct the children, each time they make a mistake the teachers must correct them; we, on the contrary, advise that a child be not corrected, that he be left in error, not only in the absolute sense, but only in these his spontaneous efforts for perfection, for if we interrupt with our correction we may distract the attention which has just awakened and on which alone we can count for this perfecting of himself. This is exactly the opposite of what was done by former methods.

Formerly they sought to attract the attention, now not to disturb it. And we notice, for example, among the errors a child makes this one: In a given didactic material he is placing, let us say, eight shades of the same color in order, and he makes a mistake. He puts the light where the dark should be in this given order of shades. As, by our lesson, we are sure that we have made the child understand how and in what gradation of color he must place the shades, if he does not place them all in order, it means that he has not acquired the power of perceiving these slight differences in the gradation of colors. And in correcting him we would attain the superficial goal of putting them in line, in order of gradation of color, but we would not succeed in giving the child what he lacks, namely, the ability to distinguish between these different shades; for to do this we would need a supernatural power, to make to child see what as yet his eye does not see, to give perfection as if by miracle to one who has it not and must gain it only through his own efforts.

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What must we do so that the child may succeed in putting these colors in order of gradation? Keep his attention fixed on these exercises in such a way that he will continue them himself until he has developed the ability to distinguish the shades. And only then, when he has succeeded in this, will he have made an acquisition of which we can eventually make use in other lessons.

Now this simple fact is of profound importance, for it points out two things; first, what man can do only through his own efforts, and what no one can give to him from without, for all that one man can do for another is to remove all obstacles so that man may perfect himself spontaneously; secondly, one can give guidance, can give an external impulse to man's progress.

The method in use today in the schools is based on the confusion of two facts, that is, the perfecting, hence the development which may be gained by individual effort, and the help that the outside world can give to natural development. This error we find, not only in the schools, but throughout the whole life of man. For example, when a new idea is expounded, only he can apprehend it who has developed enough to be able to comprehend it. And, if it is a question of giving the same idea to persons having apparently the same culture, the same age, and the same social condition, some will understand it, but others never can understand it, for the ones have what the others lack, the necessary inner development which leads men to understand even fairly simple things.

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It is the Gospel lamentation of the blind man who said to Christ: "Make me to see;" for only a miracle can cause me to see that which I am not able to see." And to see and comprehend certain things would be a miracle for some people who have not the preparation for comprehending and it is simple only for those who are prepared to understand. So, to follow men from childhood up along this two-fold path, and to take into consideration as fundamental the inner development, maturity, and the preparation to understand even the things which come from without, this constitutes a positive fact which must be established by a method in education.

Here, also, the teacher must have an art together with a science; the science of knowing the child's mind, and a method of education; and the art of knowing how to observe and how to recognize the degree of development in a child at a stated period of progress. That is, the teacher must learn, not to teach, but rather to observe.

And the fact that the teacher who enters the school must be not only an instructor but also an observer is not alone a revolution in the form of the school, but is also, I believe, the beginning of a science of education, a positive science, in that all positive sciences spring from the observation of natural facts.

Undoubtedly the mere action of the teacher is simple enough in its appearing to give a lesson, but are not all the modalities of the scientists in positive sciences simple? Is not the act of the scientist simple when in the quiet of his laboratory he puts a drop of water taken from an algaee under the microscope to see the infusions? Is not the act of our observing an insect a simple thing? Does not all

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this seem extremely simple when compared, for example, to the great preparations made by the ancient professors of philosophy who were nevertheless great orators? And yet is by this simple fact that the progress of science is verified, because the manner of scientific observation is simple, but the fact observed is great, for one is observing a fact of life.

In spite of this the teacher under this method must make great sacrifices, for she must practically lay aside her powers as teacher and her accomplishments as the orator and the enchantress of the place, and she must make herself the humble servant of a natural fact which is in process of development. In this natural fact, in a class of children who work spontaneously, developing themselves, this teacher will undoubtedly find an inner compensation, and so great an interest that it cannot be compared to the interest which the teacher of today has, but can be compared to the great enthusiasm of the scientist when he discovers the laws of life.

I believe this brief mention may be the beginning of the development of a rather long theme.

The science which may spring up from this school through the efforts of observing teachers will not be a barren science like the positive sciences which have developed heretofore, which have, however, given their heroes, the scientists, but it will be something far superior spiritually and very gratifying to the teacher. For she will see around her the unfolding of phenomena which we are unaccustomed to observe: the phenomena of the inner life of man, the phenomena of the whole life of man, since it is not man's body alone which develops, but

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also his spirit and mind, the spirit which we have stifled too much, contemplated too little, and which is perhaps best studied in the years of childhood.

The apostle said to Christ "Tell me who is the greatest in the kingdom of heaven?" And Christ answered "The child is the greatest in the kingdom of heaven."

To help in the perfecting of man, to be present at this wonderful natural spectacle is the greatest thing one can think of. The introduction to this new science must be something different from that of the other sciences. Perhaps in the introduction to the other sciences the same person would find intellectual satisfaction even to the point of enthusiasm. Here it must be something like to what is meant by the phrase "I draw near to the altar of God." "Introibo ad altare Dei." I enter to observe these laws which are the highest laws of the development of man, the laws of the spirit.

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LESSON XIII.

A N T H R O P O L O G Y .

As we had to give up our Tuesday's lesson to the presentation of the didactic material, I will now devote today's theoretical lesson to explaining the biographical chart which in a measure represents the conclusions arrived at in the Tuesday's series of anthropological lectures.

The researches on the individual, presenting himself for our observation, be they of an anthropological or a biological nature, do not constitute the whole biographical history. The word in itself shows this. The biographical history is not the chart of observations, thus this word, 'history' points out the real essence of what constitutes a biographical chart: it is really the life story of the individual; thus together with life story we must go back beyond the life of the individual himself. The researches into ancestral history indeed, form the foundations of every individual biological history, because it is known that an individual is not an effect without a cause and is not only the biological effect of the species which perpetuates itself, but is also the effect of individual variations; hence every variation of individuals has a biological history as the individual sub-

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ject of a species has a biological history.

This concept is now popularized and very well known. That is to say what we are we do not owe to ourselves but it is given to us, is transmitted to us, we acquire it not by our will alone; that is, the individual has a certain amount of us and of something else which is transmitted, given to him.

This concept is well illustrated by what are called theories of heredity and indeed it is from the theory of heredity that the biographical histories come into being and unfold, first of sick people and also of degenerates (which together, from a certain point of view, that of the abnormality of the individual, form a whole) first I say of the sick and then also of normal people, of scholars.

To give some idea of the development of this idea which has found application in practical life might be useful for us so as to set ourselves in a right position as regards our task of the present moment in relation to these particulars.

The laws of heredity were popularized in France for the first time by Morel, who made a very interesting statistical study especially of the laboring man, and indeed he gave the first exposition of occupational diseases. In making these studies on the workman, on the social conditions of life which have a deep influence on the biological life of man, illustrated by principles which seemed at the time entirely new, he remarked that people who had had to submit to what we should call a non-hygienic life, for example to the burden of mal-nutrition, to intoxication, etc., are not only suffering people, who do not merely represent the fleeting episodes of human pain, but every one of these men represents the main

trunk of a special generation of individuals who are no longer like normal individuals, that is to say they are weaker individuals who have lost the normal hereditary strength of the parents, who are indeed degenerates from the parents; they are degenerates who, being weaker, transmit their weakness from generation to generation until the species becomes extinct. Hence an injured man is not only a man injured in his individuality but in his posterity when this injury represents a life distorted, poisoned, impoverished, either by injurious labor or by mal-nutrition. And in a great synthesis, which today is again repeated more or less for the didactic purpose of giving clear and simple ideas, although not exactly true in special cases, Morel gave four generations of these degenerate individuals. A first generation was of people who had consumptive diseases or diseases of material assimilation, such as tuberculosis, gout, heart diseases, etc. In the second generation Morel placed the drunkards, noting that it is not so much alcohol which weakens a man as that a weak man turns easily to alcohol, since alcohol gives an exciting stimulus to the weak organism although this stimulus is a poison which always weakens the organism more and more. The offspring then of the alcoholic would be epileptics and delinquents and the offspring of the delinquents would be idiotic and sterile, hence dead as regards the species.

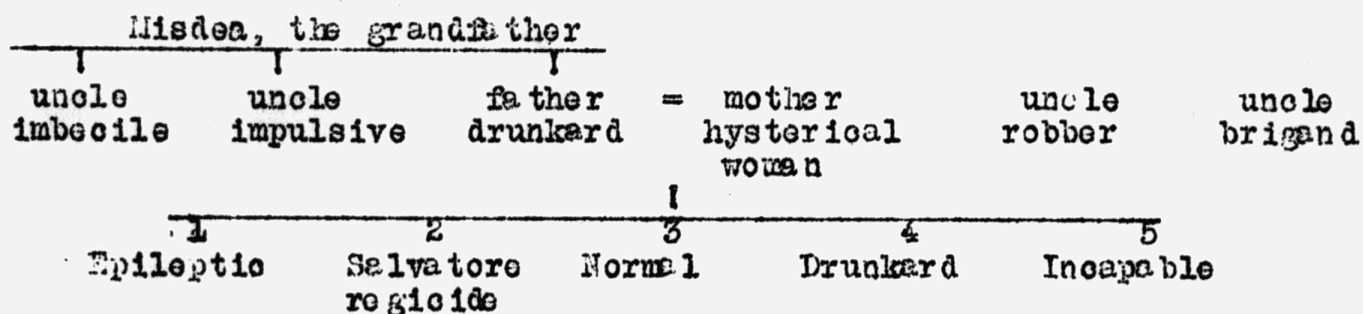
Now the fact of moral order which came from this grand concept, from this vision of genius, sprang from the present study and from actual observation of the laboring classes and greatly impressed intellectual humanity and still more so scientific men because in this idea the new concept existed that, for instance, delinquents, drunkards, etc., were not villains and vicious in the ordinary meaning of the word, but were the victims of a

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bore of the same family.

Thus also in nervous ~~m~~ ~~a~~ ~~d~~ ~~i~~ ~~s~~ there are nervous diseases such as epilepsy or certain forms of insanity frequently combined with delinquency which are family heirlooms.

Certain geneological tables are from this point of view highly interesting. For instance one compiled by Lombroso gives the geneology of the family of Salvatore Misdea who was a regicide. He had had several uncles certain of whom were governed by impulse, and others who were imbeciles, imbeciles and hence parasites and idlers.



The father then of this Misdea was a drunkard and as regards moral character prodigal, who married a woman related to robbers and a brigand. Misdea's brothers were one epileptic, two idle drunken parasites, one apparently normal man, one intractable who had therefore never been able to submit to any form of social labor, not because of a desire for idleness but because through lack of discipline he could not adapt himself to any form of work, and then there was the regicide.

Now these family histories although not so well illustrated, are multiplied in the researches made from this viewpoint by scientists for various aims. Indeed there is a first period which is limited to this: the interpretation of abnormal personalities found in communities of adults which are met with in an environment outside the normal social environment

state of things the history of which must be sought in geniality in the individuals who had begotten them. And in this case, seeing that the fact explained itself by starting with the condition of the laborers the prime cause must be traced to society in general. Then individuals appeared who were as such the biological products of society. Following this fundamental idea are the various forms of heredity, studies which dwell especially on studying the illnesses of general metabolism, the diseases of the nervous system and also that collection of pathological phenomena to which delinquency is related.

For the furtherance of such studies when it is a question of observing the personality of a sick person in the hospital, a criminal in prison or a criminal to be judged, an endeavor is made to reconstruct the history of the forefathers, to find out for instance what diseases were in the family in the case of a patient with internal diseases, what nervous diseases or what varied pathological cases or what irregularity of conduct amongst the parents of criminals. And researches will widely illustrate the fact that in reality there are groups of sicknesses which may be called family diseases and which through the generations are transmitted in an unvarying manner, growing often worse from father to son. Thus for instance as concerns internal diseases it is known that there is a disease considered as hereditary inasmuch as members of the same family may be attacked by this disease and that is tuberculosis, although it is not the bacillus of tuberculosis which is transmitted, but only a predisposition, a predisposition both morphological and physical, and therefore a tendency of the organism to grow the bacillus which is very numerous in the surroundings. Thus diabetes, gout, rheumatism, heart troubles, etc., are found amongst mem=

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either in a passing or a permanent capacity that is to say, in the hospitals, asylums and prisons. And it is natural that these studies should spring up and become numerous in these centers, because in these special centers there are found individuals having characteristics which they hold in common and which may come under the observation of some one who wishes to study them, for instance the doctor.

And the second period was that in which similar observations on the children were made. The children who first claimed the attention of the scientists along these lines of methodical observation were the mentally deficient children, the neuropathic children and minor delinquents. I am not speaking of children suffering from internal diseases, because the children found in Hospitals ^{for} internal diseases do not have to any extent diseases of general metabolism but generally acute diseases, and their personalities were therefore not interesting from the point of view of the study of genealogy.

In studying the children it was found that these undeveloped and neuropathic children had pathological genealogy similar to that of the adult nerve sufferers not always so however. That is to say there is a large class of abnormal children who as far as the nervous system is concerned and especially as the ^{to} limitation of their intellectual development were not degenerate personalities because for instance they had abnormal parentage, but were instead badly developed children having had sicknesses during the first years of life or even in the period of embryology, for instance the denutrition, or the sicknesses or the unhygienic work of the pregnant mother or the too prolonged work of the mother continued up to the last day of pregnancy, or the sufferings of the mother's soul and the shocks

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received by the pregnant mother. The whole of this great question which specially relates to woman and woman's work rises before our eyes as a formidable and unforeseen cause of impoverishment of the species; thus we know that these facts bring about unlooked for idiocy which according to Morel ought to come three or four generations after the injury of the fathers by unhygienic conditions of labor.

So too the period of nursing, the irregularities of nursing are recognized as hindrances to the normal development of the child. It has been remarked that the errors of feeding are amongst the causes of the great infant mortality in the first year of life. Now these same errors which on such a large scale can cause death can also cause weakness of the organism in the survivors. And from this springs the great social question of the working woman and also the help which society has given to the pregnant working woman and the worker in the period of nursing her baby.

The child who is not growing normally shows it during the first year or year and a half of his life, especially as regards the difficulties to be overcome in certain periods of development which are easily surmounted by children growing normally. There are so to speak three obstacles to be overcome at this age, dentition, language and walking. The difficulty the child has met with in these three periods is of great importance in his biological history; it is indeed known that the children who are weak especially as concerns the general metabolism, as in rickets and even partially in idiocy, dentition is retarded; but in the case of children weakened the nervous system there is above all a delay in the power of walking and sometimes in language, the latter in this case is only retarded but also is poorly developed with defects difficult to correct and which are

popularly but ~~incorrectly~~ known under the generic term of stammering. The difficulty of walking and of language are in great measure ~~due to the~~ difficulty of co-ordinating the movements necessary to that aim not to the weakness of the organs which are charged with those functions; that is to say, for instance, the child who is backward is not slow in walking because his legs are weak, but he is backward in co-ordinating his muscular movements for keeping his equilibrium; and the same may be said of language.

Other causes which may hinder the child's development besides those relating to the mother, the feeding, etc., are the sicknesses of early infancy, of the first years. Amongst those sicknesses two principal ones are to be noted on which depend the definite impoverishment of the organism, they are enteritis and infant eclampsy or infant convulsions. Enteritis is the chief cause of infant mortality and is fought by the same means by which we endeavor to fight the mortality of the first year of life, that is to say with hygienic feeding. Then in what may be called the second period of research there are other causes besides those of hereditary which we can investigate in the children which refer to their individual lives from conception on. So when the history of the child or the anamnesis of the child is made this anamnesis or health history is divided into two parts, one anamnesia relating to heredity which is called remote anamnesia and refers to his parents, the other anamnesia relating just to the child's life is called individual anamnesia. And in this history what ought to be sought out? The cause of physiological poverty, of mental deficiencies, of diseases, etc.

Thus indeed science had up to this point permitted of the compilation of the biographical history of abnormal individuals and had even

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aroused public interest in this history, that is to say it had thrown light upon the personality of inferior individuals only, whilst the personality of normal individuals remained completely in the dark;

Under these conditions the biographical chart was brought into the schools of normal individuals with the same aim of investigation for which the biographical chart in general was noted; and then it came about that the scholar's biographical chart aroused no interest in the public and not even amongst the men devoted to pedagogy, because when facts which might prove interesting according to science were sought out nothing interesting was found and the whole history of the hereditary and of the individual was reduced to zero, so that on this biographical chart nothing noteworthy as concerns heredity, nothing noteworthy as concerns the individual is set down; that is to say it is a normal individual. Hence the normal individual was characterized by zero, by nothing, and this nothing could not interest. Thus the forms of the biographical chart remained a blank from lack of information and the biographical chart itself was a dead letter; not surely from this zero introduced into the schools could a greater development of pedagogic and study of the individual be hoped for.

In this respect the simple investigations made without method were more successful that is to say they were conducted by the scientific method but were not methodically introduced as it had been attempted to introduce the biographical chart and it was students of sociology and anthropology who made investigations among the scholars.

The period of the study of researches among the scholars is certainly an epoch full of light and the material accumulation is very great. So as to point out a few particulars I will speak of certain work done in

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Italy. There is for instance a magistrate, a criminalist, who had made a study of the delinquents under age, and being able to observe a great number desired to seek out the schools in which these children were educated and the judgment formed of them by their teachers. He found that these children had been in the schools for a more or less long time, and had to a great extent finished the elementary schools, as compelled by law, and that in greater part they were children noticeable and punished for their irregularities of conduct. But to compile statistics and to tell which were the principal irregularities it would be found that the males for the most part stole small objects from the teachers and their companions, second place in the statistics was taken by the fighters with weaker companions never with the strong, then came a number of obscene; as to the females these children in great part were for calumny, for having libeled their companions, in the second place for envy and revenge, again for obscenity; a lesser number of children were punished for a kind of mania for contempt, the mania for creating scorn, others for spying and others for incorrigible blasphemy.

Then investigating the conditions of the relatives of these children that is of the parents, it was found that the larger number of these parents were idle or semi-idle, a large number of drunkards, many delinquents.

Also the children who became minor delinquents had passed a long period of time in the elementary schools only remarked as children with defects of character, of conduct, more or less punished, not followed up, and left to their fate.

Other kinds of investigations and interesting researches were made among the children who though normal as to conduct presented intellectual

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difference or rather differences in progress as to their studies. Here in Rome for instance, a study of many of the common schools has been made choosing the children who were not admitted to the examinations because they had not studied, not as a punishment of a moral order but only because unsuccessful in their studies, and on others who on the contrary passed without examinations because they were so successful in their studies. And it was found that with the children not admitted to examination this note predominated in the family: a very dirty, badly kept house without economy and order, and with the other children who passed without examination, a clean, orderly house, thrift and order in the family spending.

Naturally the children not admitted to the examination were also less cared for in their studies by the mothers; vice versa those passing without examination were the children of careful mothers who helped them in their studies. But as in the case of immorality facts were noted especially as to order of morals of the parents, such as idleness, drunkenness, etc., here it may be said only the irregularities of environment were noted, there it was in the parents that the causes of individual differences lay, here it is the environment and the house which contains this cause of difference.

Certainly these are studies, which as all statistical studies, give only the main outlines of a phenomenon; but yet we can begin to say that if our schools have as chief aim that of teaching the children the cause this is the aim of our schools— to give a definite accumulation of intellectual knowledge) then the schools and the home have a great and intimate correspondence. This is surely nothing new, but as all things not new it must have two periods, one a vague intuition as to the existence of the fact and the other the study of the fact and the possible utilization

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of the study of this fact. Now if as is always said there should be an intimate agreement, a correspondence between the school and the home that means to say that we should place ourselves on a practical footing to study the great questions. It is always asserted that the children should be happy in their family, should have an environment favorable to their studies since the life of a child is divided between these two environments; what does this affirmation amount to if things are left unchanged? Now to change a state of things it is not sufficient to indicate the error or to want to remedy, but what is needed is after having studied the error to construct a remedy.

We can however see that the biographical chart of normal individuals must carry its researches not so much into the biological facts as into the social conditions: hence if one day it should really be desired to introduce the biographical chart into the schools it must be based on new foundations as something specially relating to the normal individual and as far as the biological part is concerned what would be interesting would be to follow the development of the normal individual. Now the social part which relates to the child's life is undoubtedly the home of the family. Hence the biographical history of the child must be in a measure the history of the family habits and the material history of the environment in which the child lives. If we should wish to set up a scientific guide of this order we should find a road in great part well-trodden because not only through the studies of students but also through social studies there has already sprung up a method for observing a whole family. There is indeed a great sociologist, Le Play, who in his great work named "Les Ouvriers Europeens" has founded according to many sociologists of our time the real positive social science. Le Play in these studies has given

the outlines of what he called the monograph of the family, that is to say the study of the family.

From an economic point of view Le Play places this study of the family on the basis of the family finances. To know how a family spends its earnings is a great index (and at the same time easily attainable) of the life of the family itself. As all studies carried out systematically this one also immediately throws a great light on the interpretation of even vast social facts. For instance nothing could be more interesting than the comparison between the family of an English workman who earns the highest wage obtainable by a workman in London and an officer of high rank in the English army who earns about the same thing: the family of the workman does not know how to step out of the coarseness of his existence and of the narrowness of an inferior life whilst the officer of high rank with the same money can attain to all the enjoyments which the social environment can afford.

This should be sufficient to make it clear from the social point of view how for instance the question of the workman cannot be only an economic question and how the question of the salary may not be the question of the life of the workman; that is to say how useless it may be to pile money upon a man who does not know how to enjoy it, because whilst society was giving him money it was obscuring his eyes and not allowing him to see what are the real enjoyments in the world. Then it would be sufficient to take statistics on the method in which certain individuals having the same amount of money as certain others, spend it, to understand immediately the social conditions and the method of living of the family.

Thus for instance when people are found accumulating material objects, not traveling, not obtaining those intellectual and artistic aids

which their environment gives, immediately through this alone a great difference in the formation of the individual is found; and indeed this alone shows that the social reform cannot be only an economic reform but must of necessity be an educational reform. And if we reflect that if education in enjoyment cannot be given in a minute because he who would enjoy must learn to enjoy then we understand that social reform must begin with the education of childhood. For instance if we should think of giving money to the workman to enable him to enjoy works of art, music, etc., we should deceive ourselves because in order to enjoy these an artistic and sensory preparation would be necessary to the workman which the workman does not possess.

Besides this most evident difference of education and environment which is shown by the monographs although in a very limited manner according to the method of Le Play as regards the management of the income and spendings, other particulars arise for explanation because it is understood that all the family does is in relation to the expenses; thus if it is seen that an individual spends a great deal for objects injurious to existence rather than for objects which could help life this person will be more moral or less moral and so on.

The family monographs are considered as the first stone of positive social science without which social science does not rise above a superficial level and frequently an erroneous level because big statistics never set forth those details from which practical reforms must start.

It is evident that if in a society the life of each family could be known the conditions of society would be very well set forth and the study of the genesis of society would be established, and also social embryogeny as it is called would be founded and we should also have the ori-

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gins of accomplished facts rendered easily accessible to the observation of society and at the same time the formative cell of society would be explained, and a species of social histology formed.

Now all this is convincing and may illustrate the truth widely. But the great difficulty in traveling this road is that of penetrating to the bosom of these families to obtain the necessary information and this was also the great difficulty recognized by Le Play. To this end he made an appeal to the women like that of our poet, "Women, of you the country expects great things;" because it was said that perhaps only women with her delicate tact would know how to go into the families, obtain the confidence of people and discover the truth (which owing to the formation of our society is obscure) and from this great truth revealed by the women investigators the legislator might really know what are the real needs of this people and what is the real state of things and have the guidance of light which is today vainly sought by preparations as indirect as those of the legislators and governors — and even the possibility of finding corporations of women, new soldiers of civilization is thought of who might have the mission of preparing the material for such a reform as to gain the happiness of men inasmuch as it might be they who could give the solution of social problems setting forth as evidence what is the condition and what the real needs of the people.

But the idea did not seem very practical since the sociological studies founded on the family monograph were thus arrested.

But what might show the beginning of the solution of this vast problem is perhaps the same work which sets forth positive principles for the reform of the school, that is to say the work in which we at this mo=

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ment are interested, that of the 'Casa dei Bambini'. Then when 'Casa dei Bambini' should spring up they should spring up as they started at their first initiation with the school in the midst of the workers' tenements and directed by the teacher who lives in the tenement leading the life of the parents of the children and hence the life of the people, not however limiting herself to having a life in common or a superficial acquaintance with the people who live in this tenement as the missionaries might have who would go and live there with the ideal of being able to draw near to the people and to really share their life—but with a kind of right and with the possibility of penetrating within the family as one who has an illumined personality who possesses the tenderest part of all these families, the little child, and who by means of the little child has a daily influence on the soul of the people who live in this tenement, as you will see and I hope to explain in another lecture, a deeply moral influence on the lives of the parents of the children and above all on the inhabitants of the tenements.

The fact of placing the school taught by this special method in the tenement itself and the possibility of enlightening the teacher with scientific training, that is to say not placing in the tenements a school and a teacher but this school and this teacher whose mission, is the development of the inner life and hence of reaching the soul, penetrating the consciences and producing in reality a kind of moral reform (indirectly of course by placing a kind of leaven where something existed which needed only to be raised) this may cause the development in simple actuality of the ideal of Le Play. However as it happens in the 'Casa dei Bambini' it is not the teacher who is laboriously to search out and ask information about the family, but on the contrary she has to protect herself from the families

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who wish to give her their whole confidence. As you have seen for instance in the school when it is a question of taking anthropological measurements of the little children the problem for solution is not that of enticing the children to let themselves be measured but quite the contrary problem of how to hold back these children who come all together to be measured. The same phenomenon happens for the teacher who must seek to restrain these individuals who would wish to give her their confidence.

Thus the teacher should do nothing but so dispose the individuals that information comes to her little by little, and she should exclude a too great mass of information and should know how to choose with the criterion of science only that information which science points out as necessary to obtain an idea of the true society which has its roots in the intimacy of the family and of the home. If then it is thought that this teacher in such an office is not the sociologist who only desires to gather information for a scientific end and no matter how high but is a person who receives and gives in return, giving something useful to the families because the parents really go to this teacher not as a vent for themselves but in great measure for counsel as they are so to speak thirsty for light. Thus we can clearly see how a missionary figure is delineated in this teacher who lives in the home. It may seem that a teacher who has already a 'Casa dei Bambini' could not also be a simple worker in this social labor; but in describing the person of the teacher I will try to show how all these conditions develop spontaneously so that the teacher is more than an observer, she is a collector of facts; and so she must be a person of great diligence and not the common laborer in this field of human progress.

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Hence the special preparation of the teacher allows of a bountiful harvest when the teacher herself knows how to stimulate the spontaneous development of all things, the spontaneous development of the souls of the children and the awakening of the consciences of the individuals who go to her for counsel.

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✓ LESSON XIV.

MUSCULAR EDUCATION. ✓

In the common schools there exists almost as a synonym for muscular education what is called gymnastics; gymnastics deals with movements and performs exercises, generally imitative as the first step in teaching, and by means of order as the second step. This species of gymnastics is not in use in schools and creches for ^{very} little children and it is also considered irrational to mention a gymnasium or if you wish it gymnastics for very little children. Indeed it is natural that this claim should be regarded as something irrational, since little children of that age have not yet co-ordination of all their movements. Thus they cannot imitate and it is absurd to give an order which they are unable to execute, and whilst the educational idea takes this form and these limits certainly the idea as it is developed in the common schools cannot be placed in a school of little children.

If instead we are speaking of muscular education then we must change not only the term but above all the concept. Muscular educa=

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tion should be an education of the movements, if the movements are not yet settled in their co-ordination and in their mechanism it then can be understood that this is the time to introduce an education, a guide so that when these movements become fixed they may be fixed in a perfect way and so that all the potential forces may be developed, that is to say that nothing should be lost or deflected in the establishment of the movements.

When muscular education is spoken of we immediately conceive of something tremendously complex — why so? What is this muscular education? It is education of the movements; but the whole question of reaction is connected with the muscles and thus when muscular education is spoken of the education of all the activities is comprised therein. Indeed all actions are connected with movement, and if man had no muscles and if the animals possessing muscles had none both would be motionless. It may be said that the whole animal life consists in the possibility of movement and that vegetables differ from animals because they are motionless whilst animals move. To educate muscularly would mean to educate ideally and synthetically one kingdom of nature, and according to the complexity of the animal organism so must this education and this concept be complicated, and hence that of man must be immensely complicated. If man moves from one place to another by means of walking, if he performs the movement of taking something, if he turns his eyes, if he speaks, if he writes, etc., he always performs movements and thus educating movement would be educating the whole life .

Thus it can be understood that not only is this a question which must be fundamentally introduced into the education of the first years but that it is also a question which before being dealt with must be defined.

Therefore I should like to give some general ideas which may serve as examples or if you prefer it as introduction to this line of reasoning because certain considerations of a general nature may illustrate the concepts which then serve to guide us in action. Thus for instance, to know what we ought to develop fundamentally in a muscular education of mankind is already a guide. Physiology tells us we can develop nothing which does not already exist, and that what exists, exists already potentially also within its limits and not only in its shape. To know the ultimate limits of the strength of men herein we have a guide in penetrating deeply into the question of education.

It is often repeated that gymnastics develop the strength. Let us give a glance at the steps in the zoological scale, at the existence of strength in the different beings to see if man should be the one who must develop greater strength.

that insects
Then we find for instance drag naturally, that is without effort, a weight which is sixty-seven times the weight of their body whilst the horse which we set up as a strong animal draws naturally, that is without the spur of violence, a weight equal to that of his own body. To drag a weight is to try one's own strength which can be tested by other methods than that of dragging a weight and these are by making an equal effort to that required to drag the weight and this effort can then be measured with an instrument for that purpose. Man for instance can pull with his hand a dynamometer overcoming a resistance which equals 0.70 the weight of his body that is to say the seven tenths the weight of his body whilst the crab pulling with one claw can overcome a resistance equal to twenty-nine times the weight of his body and the shell-

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fish can overcome a resistance equal to 382 times the weight of his body.

This glance is sufficient to show that strength is not the ideal of mankind and that along the lines of strength we cannot display our greatest activities and that the power innate in this being according to natural law is not above all that of strength.

In the series of the vertebrates the development of the brain and the proportion between the volume of the brain and that of the body is very worthy of consideration because it is certainly one of the fundamental questions taken from the morphological as well as from the physiological side. A very often repeated phrase is that the most intelligent animals have much larger brains; this however cannot be taken in an absolute sense but in a relative sense as regards the mass of the body because for instance between a rat and an ox there cannot be an absolute relation between the weight of the brain, whilst we can imagine the rat as a more intelligent being than the ox and we can verify the fact that the rat possesses in relation to his body a much more developed brain than the ox. Today the volume of the brain is considered greatly in relation to the development of the striate (threadlike) muscles which execute the movements depending on the will (that is to say the voluntary movements) because the nerves leading to the muscles having a cerebral origin, this cerebral origin represents the cerebral mass, and the greater the quantity of muscles the greater must be the mass of the brain destined to strengthen them. Thus the well-known phrase that the most intelligent animal has the largest brain has a part which may be separated from the whole when analysing the physiological question; this part may consist in this : the animal which has the greatest number of

voluntary muscles has the largest brain that is one part of the brain mass must correspond to the possibility of movement not only to the power of understanding as is generally believed in dealing with intelligence. Indeed the being who can take the most from the surroundings, for instance by means of the senses, is intelligent and indeed a great part of the brain contains the sensory centers and is made up of these sensory centers. But intelligence does not consist in taking in, that is to say it is not only in relation to the sensations as fundamental base of construction of the intellect but also of the movements it produces. Thus we may for didactic purposes state very roughly that we should divide the brain into two parts -- the brain which records the sensations and the brain which directs motion. Hence we can say that by the most intelligent being we do not mean only him who gathers in the greatest amount but also the being who moves the most.

The volumetric relations between the brain and the whole volume of the body are however most interesting for the great bulk of the body is produced by the muscles? So that in the rat the brain represents the 43rd part of his body and in the ox the brain represents the 750th part of the body. Now if we take the physiological concept of ~~the~~ relations materially and say: the larger the brain the greater the quantity of muscles strengthened by it we find a contradiction here for the ox has a large quantity of muscles even in relation to the volume of the body. But at least we can say that the proportionate quantity of the ox's muscles and the proportionate quantity of the rat's muscles are not in the extreme relation which exists between the one forty-third and the one seven hundred and fiftieth part of the body in the relation between

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brain and body. Hence it is not the mass in itself which relates to the volume of the brain, but it is something else; it is in reality the power of movement.

Hence it is not the muscular tissue; but it is the fine subdivision of the muscles as organs separate and capable of movement let us say independently of each other, although this independence of every muscle is not absolute, but there is certainly a subdivision in the laboring capacity of the muscles. Indeed we find that the muscles most capable of delicate movements are strengthened by large nerve trunks whilst the muscles incapable of finer movements are ~~very rich~~ re-inforced by very fine nerves, and thus the muscles which work a great deal which are capable of finer movements are very rich in nerve movements and as the nerves have their origin in the brain the great cerebral mass relates to these strongly re-inforced muscles. Thus we can have a small organ very much strengthened and therefore capable of moving a great deal; and then we can say that the most intelligent man is he whose muscles are the finest and most capable of movement, and that this is certainly a great part of the argument that "The most intelligent man has the largest brain."

Thus seeing that the rat's brain equals the one forty-third part of its body and the ox's equals the 1/350 part, let us see what is the proportion of man's brain. It must be premised that the larger the animal the smaller the brain in relation to the body in certain definite proportions; but setting aside these two detailed explanations, man has a volume of brain equal to the 1/40 part of his body.

Then from this comparative survey of morphology and physiology in the zoological scale we may conclude that man is an animal able to

move his muscles very delicately and that his capacities for activity in this sense are to be developed and do develop in this way but but that they have perhaps a greater potentiality than we today observe in the average man and which could be still further developed.

Certainly the educational problem is based on this:- not to develop strength as a basis since its limits would be speedily reached (strength may be developed knowing that we should be limited and that even in developing the strong man we should always develop a weak animal) but rather to develop the ability of multiplying the movements. Herein we find the unlimited and the superior, the thing peculiar to the human race hence a guide to muscular education.

A peculiarity then of man is that the motor fibers of the nerves which start from the brain and go to supply the striate (threadlike) muscles which are dependent on the will finish their histological development and become ensheathed later than the other animals. Indeed the movements of man develop quite differently from those of the superior vertebrates, inasmuch as they are far more subject to the will than to the instinct, that is to say every movement no matter how slight of the rat for instance, is hereditary and this movement is the characteristic of the whole rat nature, whilst the movement of man is the acquired, it has not a character of its own such as that which is hereditary and which is connected with instinct, but as its characteristic it has the unlimited possibility of development which in this case is a development connected with the development of the will, since it is the will which directs and which can direct these movements.

Now passing from this general concept to a still lower step of general ideas however, we may note from the material point of view the great importance of the functioning of the striate muscles, of the voluntary muscles. Amongst the voluntary muscles a very great consumption of oxygen takes place and thus it may be said that voluntary movement aids metabolism that is to say the entire material part of life and besides this the striate muscles help the circulation of the blood because contracting the blood vessels enables the blood to circulate and the blood circulates by the help of the muscles which support the blood vessels. Thus movement means the assurance of material life.

Now the fact that the striate muscles to attain to this mission of function consume the greatest quantity of oxygen as compared with the other organs, enable thus to understand how necessary it is when it is a matter of establishing an educational fact in relation to the development of the muscles, and how important to take into consideration the necessity for their being a large quantity of oxygen so that this function should be accomplished in the best possible manner. You know however that the more the brain works the more the lungs need oxygen; and then we can see that the metabolism is greater and hence the greater the quantity of carbonic anhydride and of other poisons formed. It can thus be understood how all this increased metabolism produces the necessity of being much in the open air. The consideration of the potentiality of the muscles of man would be the vision of the ideal and the oxygen the environment in which this potentiality should develop. And another consideration out of the ordinary but yet of a general character which may be mentioned here is the theory (which still is called a the-

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ory because there are so many opponents among the scientists though the practical development of physiological studies today tends to confirm it) is that there exist sensory papillae in the muscles. The muscles thus represent not only an immense organ of motion but an immense sensory organ by means of which sensibility exists in the voluntary muscles that muscular sensibility which besides giving sensibility then bears the memory of the sensibility itself and hence the recollection of movements. Hence if there is a sensory organ in relation to the rational natural normal use of this sensory organ there must exist in man as a corresponding feeling that of pleasure.

Hence according to this theory there ought to and certainly does exist ((for wider and more popularized experience confirms it -- and this undoubtedly a great experience --)) there exists muscular sensibility and there may exist a great muscular pleasure when movement occurs according to the laws of nature. Thus we have in the muscles not only a great source of life, or rather an immense help to material life, but also a source of pleasure. And if this is the general experience of many, indeed a general experience of humanity, that movement is pleasant, although the fact that this experience is not an axiom of humanity and that the scientists are in doubt and that very many are convinced that muscular movement is unpleasant this lets us understand how the movements of mankind develop along wrong lines.

For instance we find an expression of great pleasure in movement as the natural expression of humanity in the child; and on the other hand we have an expression of pain in him who overstrains the muscles irrationally, for instance with work not adapted to the strength,

and besides it is known that muscular movement not only causes pain but produces poison, and that many people waste away, get sick and finally die poisoned by muscular movement.. Then if this is so, if the question spreads out before us, this question when scientifically regarded and when social experience also tells us that man gives an inadequate importance to this ideal then this shows us that we have before us a great educational work to accomplish..

Let us turn to our special theme which is that of muscular education for little children from two and a half to six years old and let us take the children on their entry into the school at two and a half and three years old. We must consider the child of this age as an individual who has not inherited special muscular mechanism which would be his by instinct, and who shows his incapacity for co-ordinate movements; yet he is the individual who above all other living things has within him the potentiality for developing movement to its highest degree; hence he is an individual seeking to attain to a destiny which he has not yet attained, who evidently struggles to attain to it and who, ill or well, in small or great measure, will force himself to attain to it, and will attain it. Our task is to aid him in his effort for all though he has instinctively this effort for attaining to his destiny he has not the attainment itself of this destiny; therefore we should help the human being towards this attainment so that movement may be gained in a most perfect form possible and that the abilities latent in the individual may be developed to the highest degree..

Another thing we must consider in children at this age is the special morphology of the body which body has not yet attained to

those proportions which permit man to completely develop the normal movements, and which at the same time place the child in a specially difficult condition for the attainment of these movements. Hence the child is making efforts, of which one is unconscious and the other conscious: the unconscious effort is that of the growth of the body which moves towards the attainment of certain morphological harmonies by weaker means of which all movements will be easier, and the conscious effort is that of attaining the capability of these movements as for instance walking. Certainly the child seeks perfect balance in walking and to perfect walking itself, which act of walking is for man very difficult because of the upright position. But the child has not only the difficulty of establishing muscular equilibrium for the upright position is the consequence of a series of muscular labors which in definite order bring about equilibrium.)) but he has a body which is extremely difficult to balance in an erect position because as you know the child has very short limbs in relation to the highly developed body which therefore is very heavy. Therefore this equilibrium which is easily attained in man is difficult of attainment in the child. Then we can see our task, to help the child to attain those destinies which relate to the nervous and muscular action through the evolution of his body which is slowly accomplished. Hence placing this concept as basis of education, of muscular education we must limit it to a certain age and see what are the peculiarities of education at this age..

One thing we certainly cannot do and that is to order the child to perform certain definite movements. Here then is a practical exception very useful to know of and important to establish: muscular

movements cannot be as easily accomplished and the attainment of the same on the child's part cannot thus be easy for we cannot say to the child, "Do such a thing." When he does not know how to do it he cannot do it; and we can only help him to attain to this.

Then one of our possible acts will ~~be~~ be that of removing the greatest number of obstacles from the child which he will meet with in the surroundings in attaining to his destiny and let us begin our possible labor, our labor as helpers. As the first thing the child must be helped to walk and to enable him to walk he must be helped to gain his balance.

You know that I suggest a kind of gymnasium to this end: it is a gymnasium which never existed in reality as gymnasium proper; but the exercises of which I speak I have seen performed by children with most inappropriate means.

The little gymnasium which I advise should have a kind of bar which would allow the child to accomplish certain movements relative to walking without his very heavy body weighing on his legs; that is the aim would be :: to give the child a support for his heavy body so that his lower limbs could without feeling this weight accomplish the movements which he would naturally perform. Then in conclusion it is found that the child moves his legs more than he would move them if he had still to support his weight and he can better co-ordinate his movements and more quickly and with less difficulty attain his goal.

Children have weak limbs as compared with the adult because the ossification is not complete and this incompleteness of ossification is especially prominent at the extremities of the long bones where

the joints are, as for instance at the knee; and since the growth of the bones occurs precisely at the cost of these cartilages of the joints as to length, then we should try to aid the development in this direction as much as possible; to strengthen the knee joints without the physiological state of the joints being in any way injured.

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Now whilst what I have said of supporting by the bar I have mentioned is already something, yet since the children tend towards moving a great deal just because they are trying to co-ordinate and establish the mechanism of their movements thus the aids towards the development of these movements must be multiplied. And one of the aids which I consider useful and which I have seen largely applied to deficient, peratic (partially paralyzed) and rickety children, etc., which can well be used by children of this age for rickety children have soft cartilage like little children, is that species of seat in which the child swings but which supports his whole body. He can then press his feet against the obstacle make the legs rigid and strengthen the muscles round the knee joint without having the weight of his body on the cartilages.

Then what we might require of children older than this, of children that is to say from three to four is the establishment of the most perfect equilibrium possible. Then invite the children to walk on better try to have them walk of their own free will but conquering certain difficulties of equilibrium, this is what you have seen the children do in walking on the line that is to say on the line drawn on the ground. This line drawn on the ground is intended to represent the tight rope of the acrobats who walk on the tightrope in the air and which would require of the children an effort of balancing similar to that of

the acrobat without however any danger because although the movements are the same it is a matter of walking as the acrobat walks.

You have seen how the children especially by means of music easily attain this equilibrium and voluntarily continue this balancing. Thus a perfection of balance in this way makes walking easier, and also; more aesthetic and more beautiful besides helping the child to know how to walk.

Another of the movements which we ought to accomplish now, though perhaps in our civilized environment than in the past, is that of going up and coming down stairs. You must imagine the adult man in the condition of the child who climbs our stairs, you would have to imagine however a man with short legs finishing a little above the knees and with his head coming much lower than the neck and that besides he should go up much higher and wider stairs than ours. You can understand that this man would not be able to go up and come down the stairs as we do and he would have to make a great effort to attain this end. Therefore to teach the child to go up and come down stairs what ought to be done? A very simple thing; make a staircase which should have proportions adapted to the child. And then the child who knows how to walk could go up and come down stairs which would be a great pleasure for him. Inasmuch as the angles and edges of our stairs as I know, may have drawbacks in various directions for instance tempting the child to another exercise than that of going up and down stairs such as jumping, dismounting, hurling down headlong, etc., and as we wish within given limits to establish the various movements for developing him therefore we advised a circular stair which should begin and end at the wall. Then

without necessity of teasing ~~anything~~ anything the child will mount it and descend it.. This movement will certainly be very pleasing to him.

Another thing I believe to be useful is jumping, because children are inclined to jump.. I would lay a floor with colored subdivisions at various levels so that the child may jump from these various levels without danger..

You will say: "Without this the child will jump just the same since the child cannot stay still." This is true but when the child jumps in this way we say he is disorderly, naughty, lacking in discipline, that he needs a guide, that he cannot be left to himself. Thus if there are all these drawbacks let us have jumping a special thing let us provide means for it and then he will jump without being reproved for doing so.. These means may then have a disciplinary aim, as have all the aids to work which develops the child's activities..

There may be even so many other means which any one can multiply.

I remember once giving a course of lessons to certain women teachers who did not understand very much. At the close of the course I asked one of them, "What do you think is the most important thing in all that I have said?" And the young lady answered, "I think the gymnasium for little children is important."

And yet no, for this gymnasium is something which might very well be modified..

The aim in this case is important, it is to aid the child to accomplish the natural movements of life, facilitating the task thus so that later on the child may perfect what he has established, which will be

how could we perfect that which does not exist..

All movements relating to the exercises of practical life are muscular exercises, for instance those I spoke of last Tuesday, such as knowing how to open and close the door, etc., that is calling attention to the analysis of the child's own movements and leaving him to try to accomplish an act perfectly and to create in him not only the desire to develop a movement hitherto unknown to him but to perfect a movement which he knows very well.

And what is called manual labor might also form a part of this, working in garden, feeding the animals, wheeling the wheelbarrow, etc., since all life is muscular activity. Thus respiratory gymnastics, gymnastics of the organs of speech and also the movements in writing form parts of muscular education.

It is clear that in so doing these children will reach a step to which all mankind of today attains more or less well if not in great perfection; such as knowing how to work, to walk, to dress, and to undress, to accomplish the actions of ordinary life, knowing how to write, speak, and so on. It is clear however that under and above all this there may be a more complex, a finer, a deeper education of the movements which are accomplished in part by the will but have an inner impetus; because movement is not only the expression of man's intellect and will but movement is also the expression of man's feelings. When we see the face of someone who is ^{agitated} ~~excited~~, how do we become conscious of his ~~thoughts~~ agitation? By the movements of his face. And thus in the impetuosity of affection there are special movements such as in embraces and greetings, and all these facts which exist also in the or-

dinary course of life and are well known facts have a sentimental origin, that is they may be movements which come from an inner impetus which inner impetus very often produces expression and beauty in the bodily form. And this may be analysed and produced by education.

It is evident that if many men attain with artistic finality to possibilities which are not exceptional that means that these possibilities are innate in man's nature and that we can develop them. Now when it is necessary to find something which from within gives impetus to movement, then we should take into consideration what this movement might develop. It has for example developed music. All of the ancient civilizations have had the dance, which is not a need of either world or of adaptability to environment, but it is an inner need of man, it is something which answers certain of man's sentimental needs. And if all the muscles taken as a whole give a sensibility, we should take into consideration the fact of muscular sentiment just as we regard muscular memory and muscular sensitiveness as I have done in teaching writing for which end I have used only muscular sentiment and muscular memory, that is I have brought forth from within that which used to be taught only from without, from a writing copy (book), thus greatly facilitating what represented an enormous effort on the part of man. And if we can cause writing to spring from within one can also with what may be faulty means by the aid of the sensory organs develop a muscular education as in reality many tend to do in the present day, exactly as you saw last night in the gymnastics of Jacques del Croze and also in another school which is springing up and which tends to interpret the sentiment of music by movements as for example the Duncan method.

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Now this person when she moves dances and moving what does she do other than perform perfect movements? If we make a comparison between this dancer and those of the ancient school we find it is she who is revolutionizing the field of this art, for we see these simple facts: the ballet dancer of former times was one who had learned something useless, who stood outside the pale of life, who belonged to the persons who at that time wished to amuse others, and thus she represented, anesthetic and idle movement, and in this other person we see one who has only perfected motion so that seeing her it seems possible to all to be able to imitate her and we feel within ourselves the potentiality of doing the same. And if the new ~~maximal~~ man could be born in us we feel that this new man could follow this person and imitate her for she does nothing extraordinary, she has only perfected that which is in each one of us, thus those who remain in ecstasy watching this dancer feel great emotions within themselves, the desire for an ideal, an ideal of perfection and so they have as it were a vision of a more perfect humanity in which every one would be able to move with this same gracefulness.

And then the impulse which comes to us is to realize this ideal of esthetic and muscular enjoyment for our posterity.

Here then is a splendid field of education which is no longer an education the teacher can give; but that does not hinder the teacher who observes the children entrusted to her care from knowing that in the same direction lies every motion, every possibility, every individual destiny of the human being who is under her eyes; and that one only is the road to perfection and on that road no task is too humble, but everything must be exalted.

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LESSON XVI,

The question as to the important part that nature plays in education is one of the most extensive, but it is also one of the best studied and most commonly applied along with the methods existing today. It can be said that a great measure of our progress of today can be measured up in this: that man has made his peace with nature, has come into touch with her. So this question needs no special development on my part, because it is not an intimate part of this method.

The great idea of Jean J. Rousseau was to put the child in contact with nature and to let him grow up under the influence of nature itself; it is Rousseau's well known concept that man spoils the divine work, hence it is well to leave the child in the hands of God, to leave him to that freedom which consists in non-action, in this case, rather in isolation from human society.

Now, as you well know, this ideal of Rousseau's went no farther than to be put into practice in novels. Tolstoi in his concept of liberty has a similar idea, for he would have men of society,— as society is organized today — return to nature in the sense of having them return to a

sort of civilization in which man would be confined to work in the fields. In this case too, man would be beyond the reach of all those forces of evil which we find in every city and he would be led back to the most simple life, to tilling the earth. Tolstoy as you know, also wished to establish pedagogical methods on this basis and so attempted a sort of reform of man.

Now, these principles are almost too well known; on the other hand a pedagogical work unknown to the majority of people interested in pedagogy and which, from this point of view, might be of particular experimental importance is the work of Itard on the education of the savage of Aveyron, for in this case we have not a theory, an ideal, but we have a fact, and we are treating of a child who really lived alone, isolated from the society of man, hence far from the city in the country in intimate touch with nature. And this rare creature, a child grown up in abandonment in the heart of nature, Itard had been able to study, not only in itself but as a subject of pedagogical experiment, and the experiment has been quite contrary to the idea of Rousseau and Tolstoy, i. e., to lead a child, who had grown up wild with only nature as a mother, into social life and to take part in the life of a civilized city of today.

Now this comparison between ideas, which would take from man his condition of today and place him in an inferior state, and the fact of the man who has really existed, led by a slight pedagogic effort, crowned with results which represent the first stone of the new experimental pedagogy, leading him instead from an extremely inferior state

to a civilized form this comparison might be of very great interest to those interested in pedagogy.

Now, this child, who was educated by Itard and from whom arose this part of pedagogy, which was created by Itard, then by Seguin and was continued by me, can be studied or analysed under two heads: the contemplation of the great joy which nature in itself can give to a man who, as regards his psychic life, may not be highly endowed with sentiment and intelligence, and to one so low in this scale as was the savage of Aveyron, who was considered a child of inferior mentality. Without doubt this child had attained a degree of sensitiveness in the enjoyment of all natural facts which we have not reached: for example the enjoyment which may be had from a storm, the snow, the moon, the silence of a country, the various sounds of the country: all these facts, to which the sensitiveness of citizens has been hardened, were of such joy to this idiot child that the description of the expression of his feelings has something which reaches the point of poetry. For example when Itard describes the savage of Aveyron who passed a whole evening seated on the edge of a fountain watching the dead leaves fall upon the water and, as if held by a melancholy reminiscence he watches and at intervals heaves a sigh which later becomes a sound of lamentation; or when in like manner he passes a whole night with his head pressed against the window panes because a moonbeam has awakened him; or when the boy waking up in the middle of the night notices that the snow is falling, unable to remain shut in, he goes out to plunge himself in the snow.

On the other hand this child who is so hardened we would say

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as concerns his physical endurance in that he can stand naked in the snow, can breast the storm, can stay out in the rain without suffering any physical harm but rather experiencing keen delight, this child has great dislikes, he does not know how to endure what man suffers in the changes due to civilized life. For example this child cannot endure for a long time this having hot soup at a given hour, being seated, using knives and forks, etc.; he cannot endure the binding clothing with which we conceal our body from nature and guard it from the sun, cold, rain, etc.: he cannot bridle his impulse to run when he should walk correctly as is necessary in a city; he cannot restrain the outbursts of his voice and bring it within the limited modulations of speech. Here we have a living demonstration of how we sacrifice the life of nature so as to live the civilized life and these sacrifices are all in the sense of constriction, of limitation and might be called the sacrifice of the natural life of our body, a sacrifice which consists in keeping our body from immersing itself in the benefits which nature would give.

Itard who was very fond of this child and who in relating his pupil's story so vividly described these two aspects of natural and civilized life, Itard insisted on wishing the child to adapt himself to civilized life, feeling certain he was doing him great good and impelled by the faith that this savage child would realize it as such. And in truth, he attained this great and glorious aim as an educator, for the child does come to prefer the benefits of social life to those intense joys which he experienced in the life of nature. And the fact which most urges a child toward civilized life is the love he bears the one who educates him, and, little by little, the possibility of tasting

some of the comforts which are undoubtedly an aid to civilized life.

The detailed description of the changing of this savage into a civilized man should form one of the most important and fundamental studies for those who are interested in education, especially in education with reference to nature, and I think that some day Itard's books will be considered as classics for all educators. For from a certain point of view, we can say that all children represent to us what the savage of Aveyron did to Itard, apparently all children are born dedicated to or predestined to the life of nature and they must all, through the process of education, adapt themselves to the life of civilization.

To know in what measure this road must be trod, this is what should interest everyone, not only those who are concerned with education, but it should interest every civilized man.

It is generally held that the two things are opposed to each other and this is precisely the stand of Rousseau and Tolstoi: that is it would seem that there must be two modes of life absolutely separate and that one must almost decide to choose between a life lived in common with others and in the civilized form of today, or whether the absolute life of nature would not be better. Whereas it is evident that the maximum perfection in education and in life itself must be found in the harmonious union of the two lives, which indeed, is a fact not only understood today but in a great measure put into practice. To place man in contact with nature can never be a useless act for in order to live well man must get in touch with nature.

In recent times many experiments, having also a general bio=

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logical importance, have been made upon the relation of life to nature, for example the stimulating action of the sun's rays, the action of certain lights on the life on microbes and on cellular life. Embryos of some animals have been isolated from the earth's electricity, from the magnetism of the earth and it has been found that for this reason alone these beings which could grow contracted rickets. So the conclusion was drawn that human beings do not live by nourishment and oxygen alone, as we have carelessly thought, but they live by means of many other natural elements, hence a being in contact with the earth, the sun, and the vegetable life of plants is one who drinks from the very springs of our life. And these principles which we might call materialistic and physiological are those principles which are just now appearing on the pedagogical horizon not only on the medical.

There are feeble children who gain strength by being exposed at length to the sun's rays or stretched out for a long time on the grass. Thus it is clear that the rays of the sun, the magnetism of the earth and of the living grass are an aid to life.

We know for example that tuberculosis can be cured by the action of certain ultra-violet rays of the sun at a given height; and on the other hand, we know that everything that helps strengthen a weak person will in the name of reason strengthen a strong person, hence those means which we first studied so as to aid a feeble life are the very means which should assist a ~~single~~ regeneration of normal life.

In fact there is a strong tendency nowadays to send all normal children to take those forms of cures which are no longer constitutional cures, but educational cures to put them in touch with nature: for

example children who go lightly clad, children who must stay at the seaside not to take baths, as was once the sole reason, but to be exposed to the action of and of the sun's rays, children taught to sleep on the ground, in the open air, all these are only means of placing the child and the budding life in contact with the vivifying forces of nature.

A still more advanced step is beginning to be taken in no longer allowing children to be shielded from sudden atmospheric and meteorological changes. Formerly we feared to let the children walk in the rain or breast the storm, while now we know that one of the greatest instincts of childhood is to be able to run out in the rain without an umbrella. And from this point of view too, educational means are being formed to render man stronger.

The fact too of placing public gardens wherever possible in the cities, all this shows us that there is in this a real tendency to have man return in so far as possible into contact with nature, so that man must make only such sacrifices as are absolutely necessary to society life and no needless sacrifices.

But that part which most closely concerns education is that which refers to the spiritual life of the child and to the influence which nature has over this life. In fact the action of nature considered in the way I have done thus far would be merely material, while on the other hand the good which comes to us from nature is not alone a material benefit, it is also a great intellectual good and furthermore a real spiritual benefit.

We We know for example that the spiritual life of a peasant and

that of a miner are profoundly different however much intelligence and culture may be about the same grade. The more intense and richer spiritual life of the peasant is in direct proportion to the intercourse which the peasant has with the forms of natural life which abound in the country environment, while in the miner's case we have the withdrawal of every form of life except the human which is so low in this class of laborers.

The contemplation of the marvelous phenomena of life undoubtedly makes great impressions on one, which even a child is capable of apprehending. This is a fact so well known that there exist whole systems of education for small children founded on precisely this: the influence of the unfolding of natural life before the mind of a child. For example an English lady has a whole method of education for children based on this: that the child must cultivate plants, care for animals, watch the phenomena of vegetation and of growth, follow them and in this way gain the marvelous conception of the mystery of life which in all nature develops of itself. From these would also come a religious sentiment, or at least religious feeling would be engendered; there too, an understanding of the life of plants in relation to the external facts of environment would form so many aids to the child's learning and finally if he gathered the plants and knew how to cook them this would be still another means of general culture. These attempts have been successful especially in England so they have passed beyond the tentative stage and are facts to be made note of, for they are beyond doubt of the greatest importance in the formation of the inner life.

These attempts should not be relegated to schools alone nor

should only teachers know and apply them, but on the contrary, they should become universal criteria. When, for example, children are taken to the public parks rarely do mothers talk to their children and allow them to contemplate the natural facts which are to be seen in the plants around, in the fountains, and in the flowers about to bud, but their only care is that the little ones run and that they may get all the sun and air possible. Now, the realization of the fact that children who go to the parks should imbibe not only air and sunshine but also a feeling of the mystery of life and of the beauty of life, this is something which the general public must yet acquire, but which is undoubtedly had by all intelligent teachers.

Thus I too, have welcomed for our children these means of education already so well applied, consisting in cultivating plants and in caring for and bringing up animals and we, like others, have noted this phenomenon of joy and unusual interest on the part of the child. For example, our teachers tell of the deep emotion some children experienced in seeing the chicken come out of its shell or in noticing of a morning that there were two little chickens where there had been none before. I myself have seen the contemplative faces of children of four who had seen a large red rose open in a vase where the evening before there were only buds.

Surely all these signs of emotion are of great educational value. Children can arrive at such an understanding of this mysterious wonder of life in process of development that they consider it capable of comforting the inner life.

It happened one day that a lady whom the children knew to be

in sorrow, came to visit in the 'Casa dei Bambini'. As they did not wish to speak their sympathy they took her by the hand and led her to see a growing plant.

This fact of the important part nature takes in the development of the physical life and also of the intellectual is all the more important for us in the method which I advise, because when a child has had the preparation fitting him to become an observer of the environment by means of the didactic material we give him, the intellect of that child is, in a great measure formed. And one of the aims and forms of education, as it is considered within the limits of the method which I expound, is that of guiding a child, indirectly, to know how to observe in the greatest possible degree and then to await the spontaneous manifestation of this observation. So we, contrary to the others who make use of nature in order to form the inner life of a child, we do not wish to teach the child too directly to observe nature, but we leave him to observe it by himself and we try only to be able to give him the means and the capacity of observing and when we see that he is not yet able to observe natural facts we do not have him observe them, though we do continue our work which should tend to make him an observer. When of his own accord a child succeeds in being interested in and in observing the phenomena of nature then we may be certain that nature will have a great influence on the child himself.

This is a delicate task, if, for example, we follow the idea of ~~our~~ time by describing the flowers and the plants, these flowers and plants become distasteful to the child because he had to make an effort to understand the details, and thus we stifle in the child the

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possibility of his eventually observing flowers and plants. While if instead we give him the principles which will enable him to observe these flowers, he will stand and observe with wonder all the particulars relative to those flowers and will experience great joy therefrom. And if we know how to cultivate this tendency, this thirst which gives him the delight of a discoverer, then indeed we need only put the child in contact with nature and he will observe it; so that one fact particular to our method in this so different a criterion of education, consists only in being a special educational technique, which tends to prepare the child to enjoy nature.

To enjoy nature is a privilege which does not depend alone on the fact of man's being brought into contact with nature, but it is a privilege which depends on the inner unfolding of the spirit of man. Indeed if today we furnish humanity so many ways of putting itself in closer touch with nature than was once the case, not for this reason have we a generation of people inspired by nature, for in the educational formation of these persons there was lacking, in a great measure, that care of the spirit which leads one to enjoy and to observe natural phenomena.

We have, one might say, two groups of great observers of nature, first the scientists then those endowed by nature, whom we call artists. Both scientists and artists have the power of observing without tiring, nay, they enjoy it greatly, the most minute details of the natural objects, minute details which escape the eyes of others who are likewise face to face with the same natural phenomena. Which is to say that material eyes do not suffice in order to see that which ex-

ists, but one needs the spiritual preparation to see it and to enjoy it.

We have the wonderful example of one well known to all for his love of nature and his ability to see the most delicate details of natural objects, one who was neither a scientist nor an artist but a saint, St. Francis of Assisi, who, was certainly the greatest admirer, lover and observer of nature because of the spiritual preparation which in him was very profound and personal and manifested itself in a sort of love of nature of a different kind, however much that may also be love which scientists and artists feel towards nature.

In closing I should like to read to you St. Francis' description of the harvest fly, for this will show how this refinement of the spirit helps one to see some particulars which, for example, a scientist, armed with instruments and guided by a rigid scientific method, could not see; minute details which however may appear very vividly to the eyes of one who is spiritually alert.

St. Francis says, it is the harvest fly which speaks: "Who gave me these light little feet provided with compact and flexible little bones, so as to jump easily from branch to branch, from twig to twig? He gave me eyes also, those crystalline globelets which turn and look before and behind to spy out all my enemies. And He gave me wings, soft golden tissue, green and blue, reflecting the color of the sky and of the trees. Joyfully I flap my wings in a way unequalled by the lark or the nightingale"

This example suffices to show that if the spiritual preparation to see that which exists can bring it to pass that one person unites the powers of observation of a scientist with the inspiration of a poet and

can possess language like that of the Saint to whom we have just listened, if this is possible why there is an analogous preparation which tends to the formation of the inner individual and gives material for developing the intellect, another preparation so that the individual may know how to express his ideas with greater clearness. And I think that, for example in the elementary schools in the preparation of compositions, this form is one of the most efficacious means for the individual's forming his style and acquiring a wide and extensive range of ideas, while all this no longer represents brain fatigue but only the outlet of natural enjoyment.

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Lecture 17.

I have said that one of the first exercises comes from this didactic material, that the fundamental phenomenon is this: That the child repeat the same exercise an indefinite number of times, and this leads the child to attain certain inner acquisitions, to perfect himself. We can say that some of these exercises perfect in the child the ability to distinguish stimuli differing slightly one from the other; hence, they lead the child to do a sensorial exercise, that is, to perfect his senses.

You have also noticed from the biographical chart that I consider the first important phenomenon to be observed to be this: When the child fixes on a definite work and repeats the same exercise several times, that is, when he has concentrated his attention on some object. But this "fixing his attention on an object" is not what is generally meant in schools having the common method of "attracting the child's attention to an object." In fact, in the usual schools we must make an effort to call the child's attention to an object and his attention does not remain spontaneously fixed on the object itself, but it soon wanders,

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and so much so that it requires special activity on the part of the teacher in order to be able to attract the child's ~~maximum attention~~ to this object.

A well known characteristic of children is that their attention passes easily and quickly from object to object, so true is this that, according to James, the child belongs to objects more than to himself. One of the chief difficulties which the education of small children presents and which might be termed a psychological characteristic is just this: That the most varied objects which may be presented to him only attract fleeting attention, so that it is hard to call his attention to one special object.

On the other hand, we think that the attention which develops within the child is very different since attention is awakened not by the effort of the teacher, but by the simple presentation of the object, and, when awakened in this manner it is not fugitive, it does not pass from object to object, that is, the attention is not possessed by objects presented by chance, but it naturally fixes on one object. This object leads the child to concentrate his attention and produces a reaction of activity and leads, for example, in this case to sensorial development.

Little by little the attention becomes so concentrated that external stimuli which might draw the attention of an adult who no longer has this characteristic of passing easily from object to object do not attract the child's attention. For example; we find that children who are busy with this and other sensorial exercises remain intent on the exercise and repeat it many times,

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even though surrounded by children using totally different objects.

Even though music suddenly starts up, or many visitors come in; etc. So; there is a concentration of attention which surpasses the same degree of concentration in adults as we see it today. This fact would be contrary to what we believe to be knowledge of infant psychology, and whenever this phenomenon becomes an established fact it reveals the initial fact of an education which will develop later.

I should like to read you a few sentences from James, for he is one of the most modern of psychologists. He says: "The ability to recall an attention which tends to diverge (and he speaks particularly of children) is the work of judgment, of character, and of the will. No one is master of himself if he has not this power.* And the education which should succeed in attaining this faculty would be an education par excellence." He adds that this education does not exist, that perhaps it cannot exist, for, as he says later on, he indicates all known methods, and they have not succeeded in this.

However, he offers this as a principle: that the discovery of a means of fixing the attention, of organizing it, would suffice to found an education which he would call excellent, nay, more, "Education par excellence." And James compares this idea to the ideas of many pedagogists and psychologists, who admit that the infant mind is like something passive and plastic on which images are fixed, and the whole mind is then formed on the primitive experiences of the mind itself, which would consist in passively taking from the environment, so that, for example, it would suffice to give

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some impressions from the environment and to have them pass through certain definite experiences, for these experiences to form the primitive material of the mind, which, in turn, would, according to its laws, establish itself on this primitive material. Whereas James himself recognizes that this primitive passive state does not exist in the mind, but there does exist an activity, a phenomenon of activity, namely attention, and because of this phenomenon we do not observe all things indifferently, but there are some things which attract our attention and some which do not, so that the mind is built up, not upon something passively met with, but on something actively seized.

Then this inborn primordial activity can be likened to something which persists and begins to characterize the psychic individuality, and which is alive to some instinctive impulse such as the instinct which leads up to pay attention to certain definite things and not to others, and we notice those things towards which, we might say, we are led by this primordial impulse, which is not a chance impulse, but a principle for the construction of inner personality, which must in turn develop according to its own particular laws.

Then attention is not something abstract, but something which must be developed; and the attention is turned to certain definite objects which correspond to this instinctive impulse in a primordial state. In fact we, in the outer world, do not see everything, hear everything, and feel everything, but we feel, see and hear only some things, those things which suit us; and these

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things we can assimilate and we notice them and assimilate them in a measure as we are able to concentrate our attention. But we do not concentrate our attention haphazardly though it may be according to a tendency within ourselves.

If this is so, turning to our own case in the education of children, we can face a program of study or a system of education. Let us not try to attract or draw the child's attention to some object, for we have not the power to do this; we cannot take the child's attention and carry it where we will, but we should notice whither the child's attention tends, for that tendency reveals the road existing in the child, or the needs of development which exist as a natural fact in the child himself. And this fact is repeated, not only in the child, but I believe throughout the whole life of man.

Upon these differences of understanding and interpretation; namely, that in us there is a preexistent activity and that we have not the power of carrying the attention or developing the mind of individuals according to our whim; and that, on the contrary, this activity which must develop according to its own laws, exists already formed. Upon these two different concepts are based all thought construction psychological and pedagogical about which there is much discussion.

It seems, according to some people, to the majority of people, and according to the usual application of the methods still in use today for both private and public education, that the ideal to be attained is that man may be able, be it even by an effort of the will; to persist in a definite work which has been given him as

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necessary to his existence. That a man should do what nature dictates seems, or is considered, bad education, while it seems to be good education for him to do what external circumstances oblige. But, leaving this concept, we might say that it is good for man to do the most possible work; and then, in order that he do the most possible, he must develop to the highest degree what is in him, because, in the former case, in spite of great effort, he will have very slight results in comparison to the results he might have were he to develop himself according to nature and its activities.

For instance, it is a known fact that under liberal regimes and under certain conditions of government there are many men of genius, while under other definite conditions, in certain periods when a form of liberty does not exist, either genius is not present or it is very rare, though when genius does exist in these periods it is of a very high order. Now we might say that this high genius which is found even when the external regime lowers man's activities would be of a still higher order in a time of liberty, or at least, not being born by chance, there is a noticeable percentage a great number of personalities which appear as geniuses/

One of the characteristics of a genius is the power of concentration. The people who have made great discoveries or who have given the world great works of art have had to concentrate their attention, and this is the fundamental phenomenon. For example, it is said that Archimedes did not notice when Syracuse fell and was only made aware of the fact when a Roman soldier started to kill him. In that moment he said "Noli turbare circulus meus." And we know that Newton and many others were wont to forget

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completely about eating. Then they tell of Cardano who, on a diligence journey, forgot where he was going and stayed on all night till he had finished his meditations.

No teacher could have given these men of genius this power of concentrating the attention, nor could this attention be brought to bear on external objects chosen by chance, for these external objects must answer to inner needs. On the other hand there are people who; with great effort, do the work which represents their duty, but it is never a very fruitful labor.

James tells an anecdote quite to the point in this case. He says "I know a person who will pass a whole morning in this way: He lights the fire, puts the chairs in place, picks up minute grains of dust from the floor, arranges the table, glances hastily at the newspapers and takes down all the books. His eyes close over these books; he manicures his nails as he tries to lose the morning. Why? Because he is making an effort to prepare himself for the lesson in logic which he must give in the afternoon.

And now, putting aside these theoretic deductions which might be made, and coming to the case of the little child, for whom we need not make great theories, since there is no choice, and only facts can guide us, we find in the case of the little child that no one can hold his attention to one object for a long time unless the object itself spontaneously attracts the child's attention.

Should one wish to try the theory one may do so, but they will never succeed in having the child persist in repeating the same exercise up to two hundred times. There is only one way in

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this case, and it frees us from philosophical reasoning and allows us to remain in the field of true experience; and this field of experience shows us and confirms to us the fact that it is the child's collective psychic activities which draw him to this exercise and lead him to fix his attention for a space of time, and hence to reason, etc. This exercise begins to strengthen his character for the child becomes constant and patient, a thing apparently contrary to his natural characteristics, as we have not been accustomed to recognize that these exercises should be based on the needs of the child, on his instinct or instinctive impulse.

Then we should not have countless means of education but only those which respond, not to a pedagogical idea or to the criterion of a pedagogist, but to the child's own activities. Now these inferior impulses which somewhat resemble instinct vary according to age, just as instinct varies with age. This is true even in animals who live by instinct, and have different instincts peculiar to different periods of their life, instincts which correspond to the needs of life, which assure the complete attainment of the aim of life.

Thus certain special stimuli and certain means of education can be presented only at a given age and not at some other time. Hence we cannot have a theoretic principle which says "We must begin to educate the child," but there should be a positive study which will show us at what age to begin to educate children and according to the age what means to use for this education.

17,9.

The fact is that if we give this material (cylinders, etc.) to a child of seven he will repeat the exercise thirtyfive times at the most, but never forty or fifty times every day for two months, for this latter will only be done by the child who has that tendency at that moment. Thus, by presenting objects which are necessary at a given moment the inner activity is concentrated upon these objects, in that the attention is educated to such a point that, whereas, at first it was the object alone which called the attention to other different stimuli, later this holds the attention in such a way that even strong external stimuli cannot distract it. Furthermore these means allow a child to observe, nay leads him to observe, to discriminate, to reason, which in turn leads him to make selections, to choose and to the formation of his character in certain of its details, as, for example, constancy and patience.

Hence by giving these definite objects to a child at the age in which they attract his attention for the longest time, we give in reality a means, a stimulus to the entire formation of his inner personality.

We should not say, for example, "With this object we can educate attention, with this other we train the powers of reasoning, and by other means we seek to develop character;" but we can say, "In giving the nourishment adapted to the needs of the moment we educate personality," and as James says, "Educate which should succeed in acquiring this ability would be education par excellence."

The difficult thing is to have man persist at length on one exercise, but once this is done it is enough, the rest will take care of itself. We might say that having found this exercise, the

17,10.

mind must grow, the child's mind does develop, and his character begins to take shape.

When for example a child does many exercises with these cylinders, with the cubes, the prisms and rods, then with all the colors, etc., what does he do in each of these exercises? He concentrates his attention for a long while, he observes, compares, chooses, reasons, makes decisions of his own will, remains steadily at one task; wherefore he becomes patient, and repeating these exercises by so many means there is established a certain inner development which no teacher could give to him.

In fact James says "That education which should succeed," for he speaks at length of educational means for children, concluding that such a thing is not possible because, as long as there is the teacher to call the child's attention to a phenomenon, the child is kept from developing himself in that way which is the only way of selfdevelopment, and that is, to have the inner activities expand in accordance with their natural laws.

Now, there are theories as to the formation of the mind, that the mind is not a chaos and that ideas become established in a certain order, and much study having been given to this order of establishment, many theories have resulted, among them the English one of "The association of ideas."

According to this theory ideas become associated in the mind in different ways, for example; by way of similarity, ideas resembling each other; by contrasting, ideas contrasting markedly; by contiguity, ideas near to each other. And from the manner in which these ideas unite comes the "Ideologica" theory based on the vast field of the self-development of ideas. //

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field of the self-development of ideas.

Instead, however, of following the association of ideas we wish just now to follow the objects which we present to the child. We begin to see that we offer the child objects which are similar and we have him seek out an object which matches another; then as to contiguity, we have him place like objects next to each other; but these objects being very similar, the one to the other, there is a marked contrast between the two extremes, and so we point out the thick and the thin, the dark and the light, the large and the small; etc. Similarity, affinity, contiguity and contrast are one and the same thing in this case/ Psychologists themselves admit that fundamentally it is one and the same fact and that identity, contiguity and contrast are furnished by objects which are entirely similar/ So in accord with this law, similar objects could be put together either because of their identity, or contiguity or contrast.

When a child fixes his attention on an object, this object is the stimulus of the formation of his mind and in reality attracts the child's attention. What is characteristic of these objects? This: they are objects of the same kind, hence they represent identity, contiguity and contrast; and it is this which draws the attention of the child. His persistent attention, his reasoning about these objects and selection of them is always based on this: to be able to recognize the identity of analogous objects, contrasted objects, but gathered together as a sort of whole. Ideas take shape in order. Hence the child not only trains his attention, urged on by an instinctive impulse towards those objects which are capable of holding his attention, but by the fact that he is attracted so long

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to the same exercise, and develops his inner life, his mind and his character; but he also gives order to his mind, that is to say, this mind which is developing develops in an orderly way, in a way which has made an impression on psychologists who have tried to observe the formation of the mind.

So we might say that all these objects which we term objects for sensory education are the gymnasium for mental gymnastics, which not only develop and strengthen the mind, but order it.

Indeed, by means of this didactic material we give basic principles, exact differences in dimension; form and color; etc, as you have seen in regard to dimensions, clear differences, the variation of one dimension, of two and of all three. And all this is presented to the child in that particular way by which he is attracted to this exercise and is led to recognize the similarity and differences between objects, and to discriminate very slight differences between like objects.

Now the child does not get these impressions and ideas for the first time from us, since the idea that there are objects differing in dimensions and color he must already have gained from his experience with his environment, but this experience, in so far as order was concerned, had produced a sort of mental chaos, and this material brings order to his ideas. Not only this, but it changes the child, in that it perfects him and develops him; hence the child acquires not only an order of mind but also a capacity for consecutive observation. It does not mean that the child who practises on these objects will at length succeed in seeing only the objects we put before him, but he has acquired the power of

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observing better and in an orderly way the things which surround him.

This is the phenomenon which develops in our children; they become orderly observers of their surroundings; they are able to notice details which at first they could not see; and these details which they note they do not put away in their minds haphazard, but they classify them. For example, a teacher in one of our Case dei Bambini was drawing lines on the board before the little ones. One of them said "What small lines the teacher is drawing," and another three and a half years old corrected him, saying, "They are not small, they are fine." Therefore in our schools little children are able to observe details and to know how to classify them in their minds with precision.

What is the difference between a scientist, for example a botanist, and a hunter as they pass through the fields? Both see the same plants, both have eyes, but in what is the botanist a specialist? In being able to note the many details of the plants, and not only this, but to refer these particulars to a classification which he has in his mind. There is no other difference. The botanist has given a definite systematic order to all the impressions he may receive as regards these certain objects, or the vegetable kingdom; and, given this systematic order, he has practised till his power of attention is very acute so that he observes details which other men do not know how to observe. But in order to become a scientist he has had to work and exercise and in comparison to the hunter he has become patient, constant in observing the smallest particulars, able to notice the slightest differences, etc. The botanist is not a man of culture because of what the plant is, but he is a man who has developed inwardly

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developed inwardly and who has acquired special faculties and a special mental order, so that he becomes a specialist ~~as regards the~~ vegetable kingdom. He is not a bookworm who has studied books on the description of plants, but he has brought about a change in himself as compared to another man not a botanist, and this special power is a result of his inner growth, and of his ability to observe and to classify mentally what he has observed, so that the vegetable world permeates the mind of a botanist in such a way that he can discover things which others have not discovered, and he becomes a discoverer, or he may gain the infinite culture which nature can give him.

By this preparation the child has a similar formation in that he acquires ability, especially that of an observer, and, as he has order in his mind, he can classify in his mind. And this, as you will understand, is a great saving for the teacher, and is a new road in education, for it is no longer the teacher who has the children observe external objects, which being able to be indefinite in number would multiply the children's lessons indefinitely, exercising only the child's memory; but, developing in this definite way the child saves the teacher all these lessons since nature will give them to him. And how? She will do it in a special way, respecting the child's instinctive impulse, in that his attention will be so trained that it will lead him to observe certain definite objects as well as others.

Hence it will put him on the road to freely develop his own personality, offering, however, large and varied means, so that this growth may take place with a minimum expenditure of strength, since order already exists. The personality of the child who is thus pre-

pared, or who becomes an explorer of his environment, somewhat resembles that of an adult who makes himself an explorer, and everything the child finds in his surroundings, which, however, is not part of the material on which he exercises, causes him to experience an emotion very similar to that which the scientist feels in making a discovery.

So children who have been trained thus to begin with, and who will then apprehend their environment according to their natural impulse, experience great joy and great emotion, and as some sides of their character such as patience and constancy, were already developed, we might say that every discovery has in the child a marked sentimental side, and this sentimental side is what psychologists are trying to develop. In our children the sentimental side is the joy of those who become explorers of the surroundings; we find that this becomes a great impulse, the impulse of inquiry, so that the child does not tire of observing, but presses forward to make observations, which are a fount of joy, and there is aroused in him the passion for knowledge very like to the passion which develops in a scientist who in his studies is continually making discoveries.

That which in the common methods was a theory, namely, that children should be constant in their work, that they should love knowledge and study and should, of their own accord, try to study as much as possible, all that becomes a reality, though the accomplishment of it takes all merit away from the teacher.

According to the precepts of ancient pedagogy every new thing must be associated with previously acquired knowledge, and that is

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what happens here. For why does the child go in search of new things? Because of what he has already acquired and the exercises he has already done, and because he is able to discriminate between minute differences in dimensions and colors and in the shapes of various objects. It is because of this that he knows how to enjoy other things in his environment which present themselves to him.

What we do in training the child is to give him what might be called acquired cognition and which instead is the fundamental formation of mentality without which external surroundings escape one or are apprehended in a chaotic manner, and there is no attraction in chaos. So it is true that we retain the principle of the old pedagogy, but we might call the principles of old pedagogy a garment, whereas here they are the man himself, for the fact that everything should be associated with something else necessitates the external work of the teacher, who first gives an idea and then brings it about that the idea is connected with others, and with this the belief that the mind should take shape like the gradations of shading, whereas that which characterizes the wonderfulness of the mind is the sudden outburst, the leap, intuition, a discovery, the possibility of coming upon what seems to be unknown, but soon becomes known to us because it can be associated with something which has already been formed within us, an unknown thing which otherwise would have been unnoticed by one not having had this preparation.

Discovery should make on man a great impression of something novel and unforeseen and yet it associates itself with something which has been formed within. The eyes of a discoverer are no longer

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physiological eyes, but they are the eyes of one who has perfected himself along a certain line; and it is this inner perfection which should first take shape in order that with it may be associated everything in the external environment capable of being so associated.

But man cannot mould the mind of another man in such detail=edness, nor can he make himself arbiter of the other man and say "You will do what I desire, what I deem best, and I will take your attention, your great inner power and all your personality must be sacrificed in order that you succeed in this which I think is best. I will be the one to guide you step by step so that you may not leap, because a leap is so difficult that you will not succeed without my help." Rather we should say: "Leave God to God. Give ^{to} God what is God's and do thou take only that which is thine." Man must step aside, help the being, and leave him to develop in accordance with his own wonderful laws; and for him is reserved the humble task of helping with the foundation constructions which can perfect that inner life which is able to develop itself according to its finalities.

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Lecture 18.

Imagination.

I know that you are keenly interested in the education of imagination. Therefore we must come to an understanding as to the meaning, the substance and extent of this word imagination. The content of our mind is made up of what we take materially from the surroundings by means of the sensations and of what we may construct by means of imagination. The material universe which we obtain from without is, so to speak, ^{the} nourishment for the imagination. Between sensation (the sensorial memory which is the recollection of sensations and which ~~hence~~ is none other than the reproduction of the sensations themselves) and imagination, there is a difference in so far as we when we imagine remember not only what we have taken from the environment, but we also construct, according to our special individual inner activities, with this material which we took from the surroundings.

There were ~~some who~~ who said that no idea however simple could exist in the mind which was not first in ^{actual} existence. "Nihil est in

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intellectu quod non fuerit in sensis." "Nothing is in the intellect which was not in the senses." But on the contrary some admit that by means of imagination something new may be created. For instance, the cases of the two celebrated women who are blind, deaf, dumb and who yet had a great range of ideas.

It is certain, however, that the material of our imagination is fundamentally sensorial. Indeed he who is born blind, who can never see, this blind man cannot imagine the world of light, of colors, of form; as the man born deaf cannot create in his imagination sounds, noises, etc., so we who have our imaginative world founded on the five senses cannot imagine a world founded on a sixth sense; (so much so that when, by means of imagination we reach the most remote point even imagining a life beyond this one where the senses would no longer exist, and where there would exist something completely different) even there, we can only imagine objects which exist in our sensations, as when we imagine a personal God, a paradise of light and an inferno of fire. And, should we desire to describe a world outside these sensations, we have no words to convey this meaning. So true is this that those persons whose lives are essentially spiritual, extraordinarily spiritual, the saints for instance, who experienced inner sensations, (special revelations which cannot be understood by those who do not have the same development of the inner life), are unable to describe their sensations in reality, because the language in which to describe them does not exist and they needs must turn to sensorial language even whilst warning us that this language is unsuitable for the impressions they receive.

All the greatest works of imagination (the imaginative works of genius such as great poems, literary works of art, works of sculpture,

of music, of painting) have as basis a world of sensations, and one author has said that imagination must use sensorial material as the sculptor uses stone. For instance, Dante's masterpiece ~~the~~ "Divina Commedia," is undoubtedly an imaginative work, but it is founded, however, on a wide culture, and the whole substance and language has certainly taken its basic matter from what exists. This masterpiece of imagination is also the masterpiece of a methodical genius, who knows by means of reasoning how to take note of those sensory impressions from which an author can draw so grandiose a creative work.

It is beyond doubt that the great composers of music were above all great hearers, and that the great painters were eminently those with great visual powers. Therefore we must notice even in the formation of the great imaginative works, varying paths, which are predominantly sensorial, following one sense or another, so much so that the latest psychological studies no longer speak of imagination as the only faculty incident to the mind of man, but they speak of various forms of imagination according to the individuals and the variation of these different forms of imagination is fundamentally sensorial. This is clearly seen, wonderfully exemplified in the imaginative forms of genius. There is a recent chapter of psychology which speaks of "hearing types," "seeing types" and "motor types" of imagination; these would be found in the individuals who gathered from the environment in a prevailing degree auditory, visual or even motor impressions, which, however, is much rarer; whilst in the normal there are mixed types which would be a mixture of hearing, seeing and motor types, that is to say, there would be individuals who could take sensations from the environment with the same intensity and construct on them through the imagination. Now this fact that the imagination

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~~They~~ have shape or direction differing as to form or varying in type, corresponds to this same inner power, to this instinctive impulse which draws the attention of each one especially to certain things in preference to certain others. So that, for instance, some are more attracted by certain definite stimuli and others are attracted rather by varied stimuli; and it is an inner force which bears the attention to these different stimuli, as in the same manner it is this inner activity which builds on these sensations, forming creative constructions and and varying types.

Thus the fundamental thing to consider is this individual tendency which shows itself thus in the selection of the material, as in the construction. Those people having in their minds a larger quantity and variety of sensory matter, having it in the best order, and having developed reasoning power in the construction of this ordered material, are people who tend towards constructing the substance of the mind in a special manner, and to creating by means of imagination, not by chance, but within a shape which can aid the foundation of a mental form.

Then to prepare the children for the education of their senses, and by the education of the senses to an orderliness of mind and to lead them to reasoning, and with all this, so act that it may be the inner spontaneous force which selects, sets in order, and constructs so that the psychic individuality may be free to shape itself, is, to prepare the individual for imagination. If imagination is a high human faculty which may lead to a construction on what the individual has according to his inner impetus taken from the surroundings, then no one can give this faculty to the individual.

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Hence when we speak of wishing to develop imagination in the children we must stop a little and try to analyze the matter.

It is said that childhood has its own special form of imagination; that in childhood imagination is very strongly developed, and that for this reason, being a childish characteristic, the educator should be led to develop this characteristic. Now according to our theory no one can directly develop anything which unfolds by itself; we can do nothing except help, giving nourishment, for instance, giving order. At the same time the illusion exists that something may be created in the individual, especially when it is a question of a creative faculty, without reflecting that it is the individual creative faculty which alone can create anything in the individual; that it is the individual who should create and should create with what is acquired, but that we cannot possibly give the creative faculty to others.

In the common schools it is thought that the education of the imagination might be, for instance, to offer an object to the child, persuading him to imagine that this object is not the thing we are giving him but another object. For instance, we give the child a Froebel block and we say to him "This is a horse;" or maybe we place Froebel blocks in a certain position and we say "This is a stable." The child may have a tendency towards believing this, like the tendency which the child in his own home has to take his father's walking stick and ride horseback on it. He whips it up and delights in running round on it, deluding himself that he is riding horseback. Making use of this tendency in the child I have seen poor mothers give the child a piece of bread, divide it in two and say to him "This is bread and this is meat," and the child eats a piece of one and then a piece of the other much

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more satisfied than if the mother had given him just one bit of bread.

You all know the experience of the child who is on the point of walking alone. So far he has walked supporting himself by his mother's apron; the mother places the child's hands so that they hold on to his own apron, and the child walks imagining he is holding on to his mother's apron.

Now it is true that these facts ~~show~~ that is, the child easily believes; but when we give the child an object, and want him to imagine that this object is another object we are not really educating his imagination in the sense in which we spoke of doing at first, and we are not preparing the formation of the mind in the man of the future. We are not aiding the normal development of the child's mind; but in this case we give him what is called in pathological psychology false perception. Indeed the thing which consoles us is that the child does not believe what is told him; that if the child really came to the point of believing what is told him, we should have placed him in the condition of the man who, because of mental malady, is subject to those forms which we call illusions, which are the first steps towards hallucination, where for instance the man seeing a chair imagines he sees an enemy, and runs forward to kill him, or a man sees a bureau and imagines that it is his royal throne.

If, then, we are observing, to what in the adult man this form of education corresponds, we find ourselves tending, not towards what yields us the development of the normal man, but we are tending towards a region which is outside the normal development. It is comforting that the child has this innate power of receiving sensations from without, of being able to reason so that he can correct these forms of illusion

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which we try to implant in his mind, indeed, he corrects them as he receives them. It is the same thing when, for instance, we are telling fables to develop his imagination, we hope that the child does not believe them and that one day he will know how to correct these errors which we have tried to implant in his mind. When we are telling these fables to the children we are not developing their imaginations, in so much as we are giving them the fruit of our own imagination. Indeed the German children, for instance, imagine Christmas as an old man dressed in black and covered with snow who brings the presents; and the Italian children imagine the Befana of Epiphany as a hideous old woman, very benevolent, however, for it is she who brings to the homes toys for the children. Now these two fables which are a product of our imagination are imbibed by the children and yet they do not represent the imagination of the children. In this case they represent the credulity of the children, and this credulity is naturally a characteristic of childhood in so far as, reason, the critical power, and the power of logic are not yet sufficiently developed to be able to immediately contradict the false affirmations which we make.

Hence what we do is to profit by a special form of weakness in the child's mind and by his incapacity for certain powers (such as the power of logic) to give the child as truth, something which is the fruit of our own imagination, in the delusion of developing in him something which; however, we wish to destroy even as we are creating it. And these fables which we give the children serve as background for the toys which the child today tends to push away from himself, when an attempt is made to give the child a straight road for the normal construction of his mind.

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Take a practical case, can we call the child who rides horseback on his father's walking stick superior to the child who has a little Sardinian or English horse and rides him? Can we say that to develop humanity in the most complete manner and to develop the imagination we ought to remove any possibility of riding on a real horse from the children and give them walking sticks so that the imagination which will lead the mind to construction, may develop? Can we say that it is advisable to feed the child on bread alone, since we can make the child believe that a piece of bread may be what he needs for his physical nutriment and that the child, who eats bread alone, thinking he is eating also eggs and milk, would be superior to the child who really has bread, eggs and milk to eat.

It is very easy for a person who has unsatisfied desires to imagine the satisfaction of his desire; the starving man imagines tables of cooked food, the beggar imagines millions and he who sleeps in a public dormitory dreams of palaces. Is this that imagination which renders man perfect? These are manifestations of poverty and not imagination. It is misfortune seeking satisfaction and being unable to obtain real satisfaction, satisfies itself by these imaginings.

The child who does not possess the critical and logical faculties, so as to discern the fable where we discern it, is an individual whose mind is not yet formed. Can we then say that in society the individuals whose minds are not developed to the height of our own are superior to us?

The child is readily credulous and we delude ourselves, that this credulity is a form of imagination; because he is ignorant of so many things clearly it is not this ignorance which constitutes his superiority

This is not the way in which we ought to try and develop imagination in the children; thus, if it is a matter of developing children's imaginations we ought first to make sure of having eliminated all these causes which might lead us astray and cause us to fall into error as to the manifestations of the childish imagination. And if ever what we believe to be a prevailing childish faculty were really the fruit of poverty or of mental disorders or of ignorance, we, before entering on the education of the imagination, should try to enrich the child's mind, to set it in order, and so act that the child may to the greatest possible degree instruct himself.

It is stated that the child represents in his mental state, the mental state of the peoples of lower civilization than ours; indeed those of lower civilization are much more credulous and their imagination develops in fantastic visions; they, more easily than we do, believe in wonders, in strange beings which do not tangibly exist around us. Christopher Columbus was able to save himself from the savages because they were ignorant. The life of people of lower civilization is in this sense of the word, a supremely imaginative life as compared to ours, that is, in the sense of imagining fantastic things. The stories of the Thousand and One Nights which may be very attractive to adults of certain peoples, we consider as attractive for our children.

It may be said that the peoples of inferior mentality imagine the supernatural and the unreal as the men of superior civilizations imagine poems, works of art, buildings, etc.

Now our action towards the child must not be to nourish idly, with closed eyes, what may seem to be one of his tendencies, but we ought to seek in the child to study the man who must develop from him

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and aid him in the most direct way possible to attain to this form of completely developed man. As, for instance, we observed in language that the child has characteristics of baby talk, but we ought not to develop, to unfold this childish characteristic of language (as used to be done a short time ago) but we ought to have the child correct that baby talk as quickly as possible, so as to speak like an adult. Thus if our children are to become the men of our civilization, and if we want their imaginations to become the creative imagination of our civilization we must aid the child to overcome those nebulous uncertain periods which would lead him to fantasy, to credulity, and instead give him the foundations of a positive mind which can construct in the most orderly manner possible.

Give this aid and then await imagination, which, if it does not come by itself, will not be imagination but illusion, credulity or memory of the imaginations of others, not the imagination of the individual. The individual can only imagine when he desires to imagine and it will not be we who can make him imagine. We can give him the richest material possible for his imagination, we can aid his mind to set this material in order, to order his reasoning on this material so that he can construct if he has the faculty of constructing and then with his imagination he can create as much new material as he is capable of, but we cannot make him do more than he is capable of doing.

We can see in the common schools the sufferings and mental unhappiness of the children who have to write compositions from imagination when these children have not been given sufficient material and the mental capacity to set this material in order, so that the child's imagination may really create something. Then we see these children

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drudging when they have to create by means of imagination, reading in books, getting ideas from whosoever has imagined, because they do not know how otherwise to obtain ideas, so incapable are they of imagination. Ifb we instead of leading them to gain their ideas from books or from the teachers' words, had led them to that power which permits of taking ideas from the much greater book of nature, we should see the children who had to write a composition from imagination, walking up and down as the poets do to gain inspiration and to meditate so that from within something may be created, so that the imagination give that which is the combined fruit of the labor of the enrichment of the mind and of the labor of the creative mind.

Raphael strove to find among the most beautiful women in Rome, the type of his madonna, for within his mind the type of the madonna began to take shape, and not finding the suitable type (for the Fornarine is not the inspire~~nt~~ of his madonnas) he confesses that he had to make a great effort to paint his mental picture. First he went and sought among the women and finally he created by means of his spirit. Comparing this with the scholars educated in the old style, Raphael would have had to go and look at all the madonnas already painted to find his madonna, for he would have been incapable of turning his attention to the magnificent material given by the world, environment and humanity, and would have been incapable of placing himself in a state of meditation such as to lead his spirit to create this ideal type. Now Rafael's imagination was not something which others could give him, not which he could take from the expression of the minds of other men, for instance from another picture of the madonna.

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Thus no great playwright has written his comedies or his dramas by reading many comedies or many dramas of other writers and in this way seeking to gain the fruit of the imagination of others; but rather has he written his masterpieces when he has seen visualized before his spirit a scene unfold itself and he has described it, or when he has heard as it were dialogues between imaginary persons and has been able to describe them.

They say that Michael Angelo used to pass the evenings looking far away and when they asked him what he was looking at he answered, "I see a cupola, a great cupola;" and it was according to the inner shape in his mind that he made the architectural design for the cupola of St. Peters which is the masterpiece of this basilica.

These are the paths along which the creative mind of man imagines its creations, where it acquires those faculties which no man can give. The capacity for observing from the surroundings in the most perfect and elevated manner possible, this capacity which may be perfected, deserves to be taken very much into consideration in education.

Then there is the other capacity of being able to construct. Now this capacity of being able to construct is so individual that not only have we individual types of imagination, according to the tendencies of the individual, but we have above all very varying limits.

Certainly this capacity may be susceptible of education, but the education will certainly never be in the sense of giving to the individual material consisting of the imaginings of other men; but instead it will give the individual a way for enlarging what he has within him, teaching him accumulation, reflection, above all an inner orderliness in his ideas, the collecting of ideas and reflection and lead him to meditate on what

he has gained from the environment, to isolate himself from the environment in order that the inner man can create by himself. This would be to educate the imagination.

Thus when we couple together education of the imagination and education in religion readily we only confess that religion is something so unreal that it is necessary to first educate the imagination so as to lead the individual to be religious. And yet we see that it is not imagination which creates religion, which gives us the material for religion, for the less developed races who have this imagination poorly ordered as well as the men of superior civilization, the most elect, are all religious, only that we have a different grade of religion, vaster and higher, and the finest men have the highest form of religion. This highest form of religion has always the most positive foundations, leaving the sphere of fantasy and entering into the sphere which intimately touches the real and not the imaginative life of the inner man.

In this sense it is true the education of the imagination can aid religious education where it urges man on, (man who must be immensely enriched, having taken with the greatest liberty but in an orderly manner from the environment), to isolate himself, to meditate, and to feel within himself that which really is not experienced from without. So true is it, I repeat, that men of spiritual life, when they need to express their inner aspirations, do not find the language of mankind, which has only formed its life from externals, suitable. But it would be difficult to give religion only by means of a fable-like story, thus confusing one thing with another and thinking as it were that the road should be the same for the supernatural narration which should nourish the child's re-

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ligious powers, as that by which the fable which he has to correct enters the child mind. That rather there is a clear-cut division between false things and true, between the things which are frightful for us if they should remain, and the things which are seeds of a life which must unfold and give direction to this development so that really the man who is lying down, who is sleeping may awaken to his real life.

Now as in religion there exists this intuition of truth, and it is stated that it is not man who can give faith to man but God alone who can give it, this we may repeat for the entire inner life of man. We are not the ones who can give imagination to man, but it is man who must have imagination within himself. And this aid which we can give for the development of the noblest faculties of man, of the intelligence of man, is the same aid which leads the spirit and the inner life of man to develop.

This is why through the whole method we must give means, order, and aid but never the substance, and so act that man thus prepared and free may himself form his own inner content which he may do in two ways: one is that absorption of material and the other indeed is that of the isolation of the individual and the spontaneous development of his inner powers.

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LESSON XXII.

In ordinary language we speak of educating the senses and of developing the senses. Now the development of the senses is something to be considered not from the material side, (the development of the sense organs), for it is not the organs which are improved, rather the education of the senses represents the possibility of being able to refine perceptions in relation to sensations. Hence in preference to speaking of sensory development, we speak of psycho-sensory development, though there are some experiences which might seem to indicate a real growth of the sensory organs. For instance, it has been thought to be ascertained that in women who spin silk and so come to the point of being able to perceive differences of one thread of silk, the tactile papillae of the fleshy end of the finger have in reality a larger number of nerve ends than do normal individuals.

There is a compass, called the Weber compass, having two very delicate points which can be set for a distance of one or more millimeters or of even half a millimeter, and which can, to a certain extent, measure the distance between these tactile papillae, for when it happens that there are no papillae between these two points the individual per-

ceives them as one sensation. Thus we find that the distance between those two points differs in individuals having exercised the sense of touch from those who have not exercised it, and this would have led one to believe that modifications of the sensory organs can really take place. But, on the other hand, the essential nerve elements constituting the sensory organs are counted for instance the cells which form the sensitive part of the retina, the rods and cones, or the nerve fibers of the cortical organ in the ear, all these being anatomically established it is evident that in this sense there can be no real development of the organ. Therefore when we speak of education and development of the senses, we are really speaking of a development of the whole nervous mechanism, with which are connected the psychic phenomena and hence a psychic development.

You know that in psychology the whole nervous mechanism, to which are allied the phenomena of the life of orientation, is represented by what is called the diastolic arc, which is a sort of diagram serving to give us an idea of a rather complicated mechanism. This diagram serves to simplify and to make clear something which in itself is not simple, but is very intricate. Hence it does not represent the reality but a guide for the thought of him who is to judge or understand.

The diagram of this nervous mechanism is given by this sort of arc which is represented by two peripheral points on the body, the organ of sense and the motor organ, by the nerve center and by the paths of transmission, one the centripetal which goes from the periphery to the center and transmits sensations, and the other or centrifugal which goes instead from the center to the periphery and puts the nerve center in communication with the muscles. Both the centripetal and the centrifugal

paths are nerve fibers. The sensory nerves are connected with the centripetal nerves and the motor nerves with the centrifugal.

The psychological mechanism, based on this diagram which would represent an anatomical diagram, would be thus constituted: action would begin with the sensory organ which would have come in contact with an external stimulus, the impression transmitting itself to the center would here occasion elaboration which rushing along the centrifugal path causes a movement corresponding to the sensation, so the organism which feels, at the same time that it feels, provokes in itself a movement; and feeling and motion, through elaboration of the central nervous system, would form the two expressions of one physiological mechanism.

A common example used to explain this mechanism clearly is that of a child who, drawn by the brightness of the candle light, for the first time puts his finger in the flame, he burns himself - this is the sensation and he draws away his hand - this is the motion.

In this case the diastolic arc would represent what is called reflex action, whereas there are movements, indeed the majority, which are voluntary, having not only this elementary elaboration which changes into motion, but also the superior elaboration of the mind through which these motions would come to be directly dependent upon the will, which can allow or restrain these movements, that is to say it can direct them. But, under any condition, this diagram remains necessary to the comprehension of the mechanism and we might say that as such it represents the ensemble even of man himself.

We may divide this into groups for consideration; a sensory group, a motor group, and a central group. Even in education we can study

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these different groups and we can speak of sensory education, of motor education and of education of the intellect, however much this diagram shows in its simplicity that all these things form one whole. The nerves alone, these paths of transmission from the external world to the internal and vice versa, they alone represent the means for this great work of the coming in touch with the external world or the life of orientation.

Today we believe that the same nerves can serve for the two diverse transmissions, the centripital as well as the centrifugal. In fact we know that in all probability the muscles too, are sensory organs, since we have muscular sensations and thus what up to now have been considered merely centrifugal and motor paths can be also considered as sensory paths, and if muscles can give a sensation, our whole body must also give sensations. Indeed, we have inner sensations, we feel the heart beating, hence we have sensations from the inner vitals which are all innervated since they all have muscles and can move.

The nerves form such a mass of our organism, that, if we could take away all that is not nerve and leave only the nervous system like a delicate framework, we should see man in all his details, as every muscular fiber, every sensory cell has a nerve end.

This is why this diagram does not correspond to the reality, but it serves to guide us when we seek to understand this phenomena.

Generally speaking there are five senses: visual, auditory, tactile, olfactory and gustatory.

The sense of sight leads us to notice forms and colors. Vision with both eyes is essential to the perception of forms, especially of solid forms, whereas the perception of colors differs from that and is due

chiefly to light waves, these sensations when they refer to colors are also called chromatic sensations. The sense of sight is a chromatic sense when it is designed to perceive colors.

The sense of touch is one group of the numerous sensations which are localized on the skin, the cutaneous sensations which, as we have seen, include the tactile sensations also the thermic and baric. And these three sensations have nerve ends which differ anatomically, whereas the stereognostic sense is only the combination of the tactile and the Muscular senses.

Thus we must admit the muscular sense over which there is still much discussion among psychologists. While at first it was a widely admitted fact now the existence of, a muscular sense is attacked, but, like so many other experiences, our pedagogical experiences too, would instead confirm the existence of a muscular sense and the possibility of its being educated,

All these five senses are also called external senses because they serve to gather sensations from an external world and they differ from the internal senses which serve to gather the inner sensations of our body.

Between these two forms stands the sense of pain which responds frequently to external stimuli but can also respond to inner facts. Once they spoke of special pain sensations but today there is a tendency to admit that every exaggerated sensation can become painful. Indeed the thermic sense, cold as well as heat, when extreme evidently gives pain. The stimulus of pressure when excessive also gives pain, Etc.

Then there are many internal sensations which respond to physi=

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cological needs, as hunger, thirst, etc. Furthermore there are sensations resulting from the general functioning of the body and of which we are not always conscious, which would seem to have great influence especially on the life of sentiment. This mass of sensations in its entirety is called the kinaesthetic sense through which we can have impressions of indisposition or of well-being according as our body functions well or badly.

Now it is evident that in speaking of external sensations we speak in the abstract for we could not have a real sensation if this sensation had not reached the brain and were not already in itself a perception. In any case we can give the name of sensation to a sort of analysis of the perception of things which leads us to appreciate the quality of things, precisely those perceptions which can be had by means of the sensory organs. This which might be called a sensory sphere, represents to us the external world so that we come in touch with and know the external world by means of the senses. Hence we do not know the real external world, but we know the sensations which come to us from the external world and only in a measure as our sensations are accurate, only in such a measure can we come in touch with the reality of the external world.

Now, he who would advocate educating the senses in this taking from external surroundings would also advise preparing persons to come into touch with reality if you like with the true reality of the world which surrounds us.

To tread the road of truth then is to have people live by reality, putting them in touch with truth. When instead we give illusory or at least inaccurate sensations, the whole inner world which is beginning to take shape by means of this sensory sphere is as much farther away from

reality in proportion as the sensations are inexact. If then we think of a society of men, who look at the external world each one in a different way, we must think of a society of inner worlds each different from the other. Leaving people to themselves, in such a way that they may gather at random from their environment, not having a special education of the senses, as has generally been the case up to now, one can study in men, as has been done by experimental psychology, what they have succeeded in gathering with their senses from the reality of the external world. It was found that not all men apprehend in like manner hence there are men who form for themselves a world quite different from the world of other men.

One of the most brilliant contributions of the experimental psychology of today has been just this, to enquire into the formative elements of the mind, whereas ancient psychology only studies the lofty work of the mind without seeking to learn how the material for this work which was shaping men's mental content was taken from the environment. Instead when experimental psychology began to analyze sensations, it was found that there are individuals who feel differently from what might be termed the standard of normal individuals, so true is this that the sense examination has become one of the most important tests both in psychiatry and in criminology, for it has been ascertained that abnormal individuals - abnormal in intellect as well as in the moral sense - are those who can receive from the external world sensations differing from those of normal men.

One of the most characteristic discoveries was that of Lombroso, who, while studying the sense of pain in criminals, noticed that in them

this sensation is very slight so that they do not suffer as we do, and their inability to feel pity is related to this fact. From this comes that different impulse towards others because of which they easily put themselves the pale of society. In like manner the power of perception of colors and all sensations, tactile, thermic, auditory, etc. are very inaccurate in abnormal people. To this deterioration of the senses is added the different way in which the anomalous persons have of combining these varied sensations, of classifying them in their minds and also of drawing their conclusions with their peculiar reasoning powers. So in criminals, in the insane, in deficient we speak of false perceptions, of false reasoning which may lead, on the one side to delirium and to insanity and on the other side, the moral, to criminality. Ofttimes the criminal is, in his own eyes a normal moral man for what he has done seems logical, since he has gathered his ideas according to his sensations and has acted in accordance with his reasoning, hence he would demonstrate to us the rationality of the entire product of his psychic labors. But this individual has drawn from environment in a manner different from ours, he has formed his mind differently and has acted differently.

When then one speaks of a sensory sphere and of the education of the senses one does not speak of an unimportant matter or of something superfluous in education, especially when we consider children who are at the age when they take their intellectual nourishment from their environment at a moment when their mentality must be shaped by these intellectual apprehensions, for as we have always said we must in reality make ready in the child the man of the future who will think and who will act. But how can we prepare this future man if we do not begin from the starting

point which nature itself has indicated in this preparation? What does it mean to prepare the future man if we do not follow man in his natural preparation? What the child does when he is preparing for manhood is to acquire within himself a world of sensations and this acquisition is gained by attempts guided by chance. Instead, to educate should mean to help the child in this acquisition in such a way that chance alone need not give him this first material.

There is a period in the education of the senses which is especially important and it is this very one, that age in which the child begins to consciously put himself into psychic touch with the outer world. We can say that a child's first effort is that of trying to stand, especially does he start to walk before he begins to be, by means of his senses, the conqueror of his surroundings. This is the age in which there is naturally a rapid acquisition of the most varied sensations, and at this age the education of the senses is most possible, as this also, for instance, is the best time for the formation of speech, since it is during this formative period that the activities leading to formation itself exists. It is in this early age too, that children can reproduce the sounds peculiar to their maternal language and also those peculiar to foreign languages providing the child is at the age of speech formation. Thus a child is at that age in which he can educate his senses, that is to say, when there is taking place the formation of an inner organism in reference to this apprehension of the stimuli offered by the outer world.

The way of educating the senses, that is to say the technique, for the education of the senses is also furnished us for the most part by the recent studies in experimental psychology. That is to say in the

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education of the senses there exist technical modalities which must be respected. These consist mainly in the isolation of the sense and in the presentation of the stimuli. The stimuli must be first of all contrasting and few in number, then gradually the differences should become slighter and the objects more numerous. The individual must be led to recognise identity and little by little, the differences between large and small.

This is the technique of which we have already spoken in the technical lessons. But it is not this technique which constitutes education or the possibility of educating the senses, nor can we educate the senses by means of this technique. Sensory education comes when the child can of himself practice on a sensory exercise and sensory education comes only by this auto-practice. We would say that children educate their senses only when they persist in an exercise, in the repetition of a definite sensory exercise, for it is by this repetition of a sensory exercise that the child really succeeds in giving that play to the whole of his nervous system which leads him at length to the discernment of stimuli always increasingly similar. This sensory exercise, as we have seen is not merely sensory, but it is above all, an exercise in external attention, in internal attention, in reasoning, in selection, in volition, etc.

Obtaining by this means the phenomena of the auto-education of the child's senses, we are able not only, to so to speak, refine his senses but also to order the mental content, the sensations taken from environment, in such a way that they almost form the armor of a mental construction. When we say that man must be educated in truth, in the

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way of truth, we make a lofty affirmation, but what is meant by educating men in the way of truth? Undoubtedly the first step is that of guiding men to gather from environment the greatest number of truths possible. Then education of the senses has a high aim, because it has a true aim and an aim for human equality, for we seek to place the world of truth, a unique world, within each individual mind. When with these sensations which ~~transfer~~ reality and truth to the mind of the child, we help to construct the mind on an orderly basis by auto-exercise, we are preparing man to reason upon and to choose from the truths which the world offers him. Indeed while the child is coming closer to the truth he analyses this truth, classifies it and selects. The aim is not that he may know how to analyse, classify, select this truth, but that he may do an inner exercise, that he may accustom himself to know how to analyse, classify, choose and decide according to truth. To do this is to protect man from illusions which come easily when there is no guide for this early formation of the mind.

Besides this we do a useful work for the practical life which man must lead. What do we understand by practical life? Generally we connect practical life only with the main work of the brain and with motion. We believe in preparing the child for practical life by making him understand what he must do for his own good and for the good of others, leading him to do what we consider is for his own good and for the good of others, for instance having him comprehend what work he should do and guiding him to do it, having him understand an idea and put it into practice in work. Practically all that has been done up to now in the public schools has been to teach, or an intercourse between intellect, forgetting all this mo-

for sphere which was waiting to execute the commands. And we thought we had taken a great step forward in the preparation for practical life by directing man to a motor activity which would render the instruments for the execution of orders ready to execute them, and so; we think we have taken a great step by the introduction of the muscular education of man, in the full extent of the meaning of this word muscular. Muscular education stands for moving one's self, it also means work. But this is not the whole of practical preparation for life, and our every day life is not made up alone of intellect and of motion.

This little diagram was used by psychologists to show the mechanism of the inner functioning of the individual and it should also serve to make us understand the oneness of education.

He is not ready for practical life who has only clear ideas or even the ability of following them. There are many examples of this.

One of the clearest is the faulty preparation given for some professions. Let us take one of the noblest professions which exist in an elevated environment, since it necessitates the most laborious preparation, the medical profession. It is believed that, when a medical student has understood what are the symptoms of disease and what the conclusions to be drawn from these symptoms in connection with the physiology and anatomy which he has studied; when he knows how to classify this ensemble of symptoms in the nosologic table of diseases, then he is fitted to be a doctor.

Now you all know that a new M.D. is a perilous physician however intelligent and studious he may be and no one has faith in a doctor until he has become what we call a practitioner. What is a practitioner and

what is the difference between him and the man who has just received his degree? The former is no more cultured or intelligent than the latter who is fresh from his studies. This expression of being fresh from one's studies is repeated for all, for doctors, too, to show that everything is clear in their minds insofar as concerns the intellectual content. But the practitioner in comparison to the recent graduate, is one who has acquired a sensory education which the graduate has not had.

For example in order to know whether there is a heart lesion there are certain special sounds which can be heard by listening to the heart in a given way, but the young doctor does not hear the difference between the beating of the normal heart and that of the abnormal heart. Hence his being fresh from his studies is of no advantage when he is told to listen. In incipient pulmonary tuberculosis there are certain imperceptible crepitations and the young graduate not being accustomed to noting these crepitations his studies become useless to him. In like manner when he is told, "You must diagnose this malady by placing the hand lightly on the lungs and feeling certain special tremors or by feeling the pulse and noticing certain peculiarities of pulsation," he feels nothing of all this and then he presents one of the most dramatic examples which exist in society, granted this neglect of the education of the great sphere of prehension from environment.

So we see these young men betrayed, who, after having made great efforts under the illusion of dedicating themselves to a humanitarian profession which responds to a noble ideal, find that they must either take up anew and for an indefinite number of years thankless and trying studies requiring patience and perseverance without knowing whether they

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will be successful, or else they have the alternative of making their conscience less sensitive to that ideal of humanity by venturing to make diagnosis which cannot be accurate.

Today in the university of Berlin small objects are prepared for use in the sensory education of young doctors, objects which serve to feel small quantities of liquid under a surface, to hear slight noises, to be able to discern minimum differences which are in reality what the physician will have to know in the sick man. So they create objects which represent sensory education with strong stimuli; whence begins the true and personal sensory education of doctors; then these stimuli gradually diminish in strength after long and patient exercise by those people who have long since passed that first stage in which the education of the senses is a pleasure and they must set out upon this difficult road and if in the end they succeed, for instance, after ten years of arduous and patient labor, such as standing for two hours, listening to certain special sounds and touching certain definite surfaces, if after ten years they win out then they can be such practitioners as to have success and above all to be satisfied in their own conscience.

What is said in the case of doctors can be repeated in regard to many professions and it is especially true of practical life. I once found myself with a young surgeon for children who had specialised in orthopaedia and so sought to straighten and cure the deformed. He thought the best way would be to educate the mothers of the poor to recognise in their own children the beginnings of deformities, so that they might bring their children to the doctor not when they were already deformed but in process of deformation, because then he could substitute

hygienic and pedagogic cures for surgery. And with great persistence this physician sought to explain these imperceptible deformities to the mothers, but he was disappointed for he said, "These common women do not understand at all! I explain but they do not understand." Yet they understood for they repeated perfectly what he had explained, they had understood the idea but they could not see the deformity, they were not able to notice a slight deviation from the normal.

How often, taking up a cook book, we deceive ourselves into thinking we can cook! We believe it because we are intelligent, we understand clearly what the book says and it seems to us that our muscles are capable of managing all the objects called for in the book. But when the book says, "Put a fork into the meat and when you feel a certain resistance that shows it is done", and you do not understand because you do not feel, so you do not know how to cook. And when the book says, "When you notice this certain odor put in this other condiment," you will know how to measure the condiment but you do not notice the odor and so you do not know how to cook, and you realize that in order to succeed you must first have educated your senses and that if those with trained senses set out to be cooks they are successful where those fail whose senses are untrained.

How often you hear the maid who has done the marketing reproved because she has not bought the food in the best state of freshness. They are told to look carefully and they do so but they do not perceive the slight differences which can exist between an absolutely fresh fish and one that has been prepared to look so, between the odor of a certain food in a fresh condition and the same when not fresh.

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We have a plague in commerce which has come from this very fact that peoples' senses are not educated; we find an example of this in the substitution and adulteration of anything whatsoever in commerce, as in goods, in foods, etc. We do not know how to tell whether there is marble dust in sugar, no more than we can tell in what degree of heat one warm object differs from another, or what is the degree of fever unless we have recourse to a thermometer, yet we could distinguish these differences by the thermic sense were it educated. So in commerce they try to substitute articles of less value for the more costly since people are unable to notice these differences. So true is this, that today the superiority and wealth of those firms which do not deceive is based only on the fact that they do not deceive and people not being able to judge for themselves go to these firms because they are trustworthy.

When then we say that we wish to prepare an individual for practical life, we should say that this person's education must in every way, from the psycho-physiological point of view, be as complete as possible, except for specializing, a man developed in the most complete manner possible, has a practical form. But there is an essential preparation for every day life as has always been said; namely, there should be complete development of the whole personality. Yet this is so out of the ordinary that while we said it we were debating as to whether one studying medicine should or; should not study Greek, but there was no discussion on sensory education. That a sensory education is necessary to practical life was only understood by those whose profession is based on the exercise of a sense, for instance it is natural for musicians to educate the sense of hearing and so those whose profession is one of the fine arts

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like painting, sculpture, etc., must educate the eye to the most minute perception of colors and of forms.

And even from this aesthetic point of view is being somewhat diffused that education which includes the superior culture of people who are thus led not to produce by means of this refinement of the senses but rather to enjoy by means of it in such a way that they can appreciate the music and the artistic beauties which environment offers to all men. Thus we recognize a special form of sensory education for those who produce the beautiful and for those who know how to enjoy it. Now the question may be asked, why is there a limited number of those who really enjoy the beautiful? Why indeed are there men who pass by a public park where Wagner and Beethoven music is being played as if they were deaf, and why are there people who walk past monuments of exquisite beauty as if they were blind? And if we ask ourselves who are these people, we must reply that they are those who produce all the material well-being of our existence, there are those who, if they do not enjoy these marbles which are within reach of all, have not the means to procure other uplifting diversions.

When today we speak of democracy we cannot forget this essential inequality of men, which is not an external inequality like that which strikes us on every hand and against which we try to battle, but it is an inner inequality which no revolution or reform can remedy. Why must these people remain in a state of inferiority as compared to other individuals, in like manner as abnormal people or those belonging to another race are in a condition of inferiority, and why are they constituted differently from us?

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If for instance, the working man should succeed tomorrow in obtaining their deliverance they would never be able to enjoy music. When we admit the moral inferiority of laborers and say that they must be helped, we deceive ourselves if we follow the usual way of making them understand that the low condition in which they find themselves is an inferior one from which the normal man should flee, for that is a state for inferior men. How can we change an ignorant man into an enlightened being if we do not enlighten him? How can we deceive ourselves by words, by preaching and by making an idea clear, into thinking we can transform such a man into a different being? It would be as if we were to pass a law saying, "Tomorrow the blind shall see and the deaf shall hear." This would be a senseless law. Likewise when we say to a man, "Leave alcohol alone because it is a brutish pleasure if this man has no other pleasures he will keep to the only pleasures which his environment affords him. So we must give the common people different diversions and not preaching. But what if the common people are not able to appreciate these different pleasures, then only a different education can bring about the triumph of democracy in society, the uplifting of the inner life. For when we think to uplift a person by combatting his poverty, his insignificance, his inferiority we do as did Don Quixote who fought imaginary castles.

If man gives these inferior manifestations because he is inferior, however much we may preach, he will not be able to give other than inferior manifestations. It is not our struggle against man's inferior production which will make this man able to give forth superior production, the real struggle would be the attempt to make man himself superior. An inferior man will always produce inferior things, if we wish him to do otherwise we

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must make him superior.

Now the question of social redemption is not so easy as to be put into words, nor can an economic transformation give social redemption, for money does not buy everything and it is an illusion to think that by giving money one can also give man everything he likes. Man does not live by bread alone.

What really constitutes man's greatness he must acquire for himself and when we speak of wanting to redeem social man we must make it possible for him to uplift himself. Every other road is an illusion.

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Lecture 23.

The psycho=sensorial education is then not only a first step, but a great basis of the education of the intelligence, because not only does it give material to the intellect, but also establishes order in the mental construction when, through the education of the senses the individual is obliged to distinguish similar objects from dissimilar, and in this exercise to judge and to choose. Indeed, these exercises not only tend to bring material to the mind, but cause the mechanism of the mind to act and render it subtle.

The psychologists, pointing out the diversity of the two facts, speak of the greater or lesser permeability of the conducting lines, or of the projection of the external stimuli towards the center and of the association, or permeability of the lines of association, between the inner perceptions. So that there are two facts differing one from another to consider, that is, not only the arrival but the velocity and facility of the arrival. The arrival is a small thing as compared with the arrival coupled with velocity.

We, too, in our civilization, in the communications which we hold by means of the paths of our journeys, are quite different today in being able to travel these roads with speed. Knowing how to transport oneself from one place to another is one thing certainly, and the first men who knew how to cross a tract of sea or a tract of land did much, they reached a goal, but to do this with great speed is quite another thing. These are two different forms of civilization, and two different forms of intelligence exist, those in which the stimuli simply arrive and those in which the stimuli arrive with great velocity.

Now the exercise which renders, to employ a phrase in use today in the modern style of psychology, which renders the waves of nerve conduction more permeable is an exercise which aids in giving also to the contents of the mind a form of intelligence. Indeed, if we consider a person who reacts at the slightest stimulus and consider another who, on the contrary, before reacting requires a strong stimulus and even with strong stimuli reacts very torpidly, we should judge the first person as a person of intelligence and the second as not an intelligent person. Now what is stated of one stimulus which arrives at a centre or for two or more stimuli which unite in the centre, may also be repeated for all the inner activities of the mind: the fact that they exist and the fact that they are rapid in their manifestations are things which are summed up to give a measurement of intelligence.

It is noted in a very elementary way, and hence I do not insist on it, that sensations persist in time, and that this phenomenon is called memory; and also that the perceptions unite through association and that all this is different from imagination however much imagination

in reality may take and associate the material which already is formed. But in the sensory exercises which the children perform, they acquire a special activity and develop, contemporaneously with all this, reasoning power; so that it may be said perception is not a dry husk, but gives impetus to the reasoning power because every perception accompanies reasoning in a selection according to the method of sensory education.

With this preparation, leaving the child to himself, we have proved that the child becomes a spontaneous observer of the environment and carries away from the external environment the observations, which, by means of this method we have given him for the fundamental formation of his mental content. Now when the child observes something in the external surroundings which from its similarity he associates with what is existing in his mind, he observes it, knowing how to give the object a place in an order already established in his mind; then he perceives the environment in an orderly way and absorbs from the environment, reasoning as he does so, and every time he, as it were, catalogues an object in his mind it seems to him that he has made a discovery, as for instance the child who, walking on a terrace, becomes conscious of the fact that the sky is blue and notes it with wonder, or the child who discovers that all the windows in the house are rectangles. Indeed, he has not discovered the object, but he has discovered that the object belongs to a definite category, and this object he has classified enters his mind not as indifferent stimulus, but as something already awaited; in a word, it is not the guest who knocks at the door of a house, but it is a relation who enters and already has his place and his kindred who are awaiting him, and as it is a joy when a relative enters the

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house, as compared with the knock of a stranger, thus there is a joy for our children when something from the external environment comes to enrich the mind. And the child experiences, as I have several times pointed out and as you will see with experience, a special joy, which recalls the enjoyment of the scientist who makes a discovery. Through this something, the fact of the enrichment of the mind at the cost of the environment, being united to a feeling of pleasure, the child is led to multiply his observations and hence to enrich his mental content which; I repeat, is already forming in an orderly manner.

And this is a fact worthy of importance: rather than construct in a chaotic manner and then work to set it in order, he already constructs in an orderly way. Considering the future of his mind in its successive development it must be agreed that it is in any case preferable to aid the construction of the mind by means of order rather than to leave it to be constructed by itself without order. Now if the succeeding self-development of the mind must lead as, when it is a question of older children, to ulterior psychological considerations, it must, however, always be allowed that the mind in its development can better complete itself on a foundation which has been constructed in an orderly way than on a foundation which has not been laid with order.

In speaking of intelligence and of the education of the intelligence we cannot remain within the limits of the mind of a child in the age in which the child comes under our education by this method in so far as the child is in a period of primitive formation; but we can contemplate the facts of intelligence, and also eventually the education

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of the intelligence in a general manner so as to gain an opinion on the subject and to have a guide also in further proceedings.

There are certain modern psychologists who; like Bain, say that consciousness consists solely in perceiving resemblances and differences. Now this is a partial interpretation of the fact; but if one psychologist has been able to speak thus it means to say that this partial interpretation represents a great principle. The fact of choice, in knowing how to associate similar things, and to dissociate dissimilar objects, into which idea the measure of the mind also enters, comprises a great part of our intellectual formation; indeed to know things is to know how to differentiate them from others, and this consciousness, ever more and more minute; is the capacity of being able to differentiate.

Then if this is so, if our consciousness consists in this, that which leads us to know better how to differentiate between things in the largest sense leads us to know how to judge intelligently of things. Thus, when comparisons are made by means of resemblance we ought to know what is similar to an object, hence we should know how to recognize the differences and the resemblances between objects and how to judge of them. Thus the zoologist knows all the more profoundly the animals and their various parts the more profoundly he knows how to differentiate between them. The painter recognizes the shades of color and the slightest differences in the shades because he knows how to distinguish between that which the untrained eye confuses; the literary man recognizes the style of a special writer from that of other writers or the literature of a definite school; the archeologist can calculate to the millimeter the fragment of stone found in the excavations; the astronomer recognizes

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the stars separately; the antiquarian discerns the really antique objects from those which are imitations. Thus the artist recognizes skillfully and distinguishes the beautiful from the ugly, recognizes to perfection those limits which are the aesthetic limits. The musician knows how to differentiate to a very fine point the harmonious sounds from those which are not so, and so on also the moral man is more moral when he can distinguish clearly the good from the bad. That the content of our mind must have as basis a classification between things of the most rigorous, certain and clear description possible, and that we may have the most refined capacity for recognizing all details so that we may know how to discern the true from the false, the beautiful from the ugly, the good from the bad, the limits of the normal from those of the abnormal, all this is an activity, undoubtedly a fundamental activity of our mind.

Also the great works of imagination make us recognize a great power in the man of genius of being able to discern the differences and the resemblances between things, so true is it that we speak of mental confusion when this power of differentiating between things has not reached those normal limits which all who are recognized as normal possess and are normal inasmuch as they neither confound the true with the false nor the good with the bad, etc. That is, they can distinguish clearly. And we also consider the mind rich in imagination when it is quick in recognizing, in recalling similar things with a single touch. We say that the mind is rich and imaginative of him who from one image recognizes the other similar images and who, by means of a stimulus, can recall special images and gain many others, the greatest number possible. In recalling an image and then other similar images lies the

23,7.

greatness of the imaginative mind. That on the other hand he who by a stimulus recalls an image which has no relation of resemblance with it, and causes other images to arise in his mind which, however, are not similar, such a mind we call disordered, chaotic, and we recognize this characteristic in, for instance, the minds of the insane. Thus there exists in reality a fundamental characteristic of the normal mind consisting in this: In being able to recognize and associate similar things no matter how meagre this expression may seem.

One of the minds of genius most characteristic as to imagination, with grandiose concepts, yet associating with every idea some similar idea, is that of Dante Alighieri, but we see for instance that all the poets have an imaginative mind, and that they render themselves attractive because they know how to imagine; and we call that mind imaginative which knows how to associate with one image other similar images. Now he who in giving a description associates with everything he describes something which really resembles it, we say such an one has a fertile, brilliant, charming and imaginative intellect; but the characteristic of this mind is to associate similar things. Now because in the mind such an association of similarity is formed the mind itself must be something which in a healthy strong manner has methodically constructed, classifying the contents of its mind, so as to distinguish things one from the other.

The whole of what are called figures of poetic imagery are resemblances between two kindred ideas and more popularly these poetic images of Dante are recalled. For instance, when Dante in the Inferno called the two celebrated lovers, saying

23,8.

"O weary souls

Come speak to us, if no one interdicts it."

He goes on with the figure

"As turtle doves called onward by desire

With outspread steady wings to the sweet nest

Fly through the air by their volition borne

So they came from the band where Dido is

Approaching us athwart the air malign."

Instead of saying "Hardly were they called when they came," he says

"As doves called onward by desire." Now this is undoubtedly a figure of great imagination, it is an association of resemblances present to the spirit of the poet.

Another of the celebrated figures is

"As the sheep issue from the fold

By ones, by twos, by threes."

Instead of saying "They came to me," he says "As the sheep," which figure is so clear to the minds of all, and also to the mind of the poet that these souls moving in this way will present themselves, and so on.

We call the power of imagination great when the mind imagines once-basis of reality and constructs by means of imagination in an orderly way because association for similarity is something fundamental. Hence there exist as fundamental universal laws for the formation of the mind which it is well to keep in mind when it is desired not to give the content, but to develop an intellect.

When we desire to take a general survey of the phenomena of intelligence I think it well to observe the grandiose phenomena of the intellect, although generally the minutest phenomena of the intellect are studied, because the grandiose phenomena of the intellect reveal their characteristics enlarged, as it were, hence easier for us to understand and interpret. Instead, if we stop at observing the small forms of intellect we are always uncertain as to how much ~~normal~~ and how much abnormal there may be in this intelligence, all the more so as we know that the intelligence is not free in its development; and, indeed, though we all cry out for liberty of thought we do not know how to discern the forms of slavery of the intelligence from its natural characteristics, ~~but~~ since we know that there are strong intellects who know how to break the chains of slavery of thought, revealing thus the laws of nature, then it is to these intellects that we can go to seek out the principal characteristics of the intelligence and of what we must seek to obtain in educating the intellect, and we may continue following up certain facts which are akin to a manifestation of superior intelligence, we may even say of genius.

Let us look, for instance, at certain modern discoveries made in biology, such as the discovery concerning malaria. It is well known that for centuries numbers of men pined away miserably of the malady malaria, and that there were districts of land which might be called unredeemed, waste lands, not because they were not fertile, but because merely entering them caused men to die of this miserable sickness, and that the scientists have vied with each other in studying this sickness and have studied it very minutely. For instance, by means of the micro-

25, 10.

scope they became aware of the existence of the malarial parasites in the blood, and they studied it, classified it, etc. But what was it that led to the discovery?

In working among the birds an English scientist became aware that there were insects which inoculated them with malaria and then the reasoning was simple: If in the birds the insects inoculate this parasite, probably also in man the insects would inoculate the parasite.

If, the ~~thieved~~ thousands and thousands of men can be saved and if great riches can be extracted from the malarial lands it will be because it was possible for man to perform this reasoning "If in the birds, also in man." They could have reasoned thus before the discovery of malaria in the birds; they could have said "If malaria is a malady localized in the blood and if we know that the vascular system is an enclosed system, this parasite cannot be taken from the air." But this would have been too difficult, though, however, evidently possible; thus today it seems strange that so many scientists before the tremendous spectacle of so many misfortunes, that is, under such a powerful stimulus and with so many preparations should not have succeeded in reasoning thus "If the parasite is in the closed-up blood how is it possible to take it by way of the air?" But yet it was these scientists who repeated "Cultivate the eucalyptus for perhaps the odor of the eucalyptus may kill the microbe of malaria."

Then it may be said that man's intellect may be so placed or laden with such special burdens as to impoverish it, making it an impossibility to perform such simple reasoning as would lead to the discovery of great things, but which is unperceived, as, for instance, there

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23.11.

may exist a great virtue all unperceived in the conscience of one who is not yet converted.

Let us take examples from the men of genius who are very celebrated in history: Christopher Columbus said "If the world is round, then starting from one side and going always towards the other, we would return to the same place."

Truly this man must have possessed great courage, and this is a virtue, but as to his intellect, the reasoning he performed was but small: "If the world is round, then let us circle it."

If he happened on a continent and the other man happened on an insect, both had the same merit as concerns the intellect. This person who reasoned thus was a simple person; the others were a series of persons whose minds were encumbered by a lofty science. The disencumberment from science and simplicity permitted both to perform a like reasoning which led to very different discoveries, but which, from the psychological point of view were the same.

What is characteristic in Volta's discovery and in that of Newton? Volta prepared a skinned frog for soup for his wife who had fever, and placing it at the grating of the window saw that the frog moved. Everyone had seen that the frog moved. This stimulus, however, did not simply enter Volta's mind, but whilst it was fixing itself there it was stimulating the mind at the same moment to reasoning: "If it is dead and moves, and if he who moves, moves by force, then force must be developed here." It is to such a little fact, to such a small reasoning that all the progress of today is due. Newton saw a fruit detached from the tree fall at his feet, and this simple and ordinary experience provoked in company with the perception, a reasoning as to causation why does it fall to the

25, 26.

ground and not go in another direction. And from hence came the discovery of the force of gravitation, a detail of the vaster concept of universal gravitation. The case of what befell Galileo Galilei was very simple: Whilst he was in a church he saw a hanging lamp oscillate. Everyone sees lamps oscillate. But this stimulus, whilst penetrating the mind, provoked reasoning in Galilei, refining the observation and fixing it on the phenomenon. He saw that the movement of the lamp from one side was equal to that on the other: he compared the two spaces and found that they were equal, as for instance, the child found two colors were the same. These two spaces were rapidly passed over in the same time; so that little by little whilst the oscillations changed in reach and diminished these spaces remained always, however, equal to each other; the movements grew slower so that the movements were accomplished in an equal time. And thus came about the possibility of measuring the time.

If we study the history of Papin, we find that he was a great scientist he was a doctor, a mathematician and was named an honorary professor at the university; and yet history in no way connects Papin's name with his mathematical merits, nor with his medical studies, but with a pot in which water boils, and it is to this observation of Papin's on the boiling kettle which moves its lid that not only he owes his celebrity but the civilized environment of today owes its progress in great measure.

Wherever we find, when we are face to face with the personality of genius or before a great work of genius, real creative sparks, where however this imagination catalogues things in an orderly manner, or we are face to face with one who has attained another inner spark less showy, but yet powerful to give the fire of progress to the outer world, we see the simplicity of reasoning upon things perceived with exactness.

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The great phenomena of intelligence might also be studied which present an error to us, which error has caused humanity to lose much time. There are most interesting psychological facts. For instance, this: It was popularly observed that stones fell from the sky, but the scientists did not believe it. It happened that in 1790 in Gascony a meteorite fell in the presence of three hundred people. So they made an official report and the great physicist Dertellon says "It is sad to see a municipality which gives support with a public document to the talk of the people and to see authentic witness to a fact which is evidently impossible." And at Vienna the director of the museum wondered "That there can be enlightened minds capable of believing facts seemingly untrue."

Now to these people answer was made "Here is the stone, it weighs ten kilos." But they replied "We regret that an impossible thing should receive official sanction."

And we are in the habit of saying that to believe one must see, like Saint Thomas, and we do not perceive these psychological phenomena so frequent in the history of human thought. To see, we need to believe, be it even a stone weighing ten kilos.

Before the modern studies of embryology which have given so much light to modern science were initiated in Germany, theories existed having as foundation what might be commonly called imagination, which, however, was believed to be science.

The question was serious: "How do living beings come to be, how do they exist in their shape? Is it a creation every time that a living being is born, or was this being already created, existing in all its

details." It was a mystery which people sought to explain, and which was explained by imagination, by fantastic imagination, not representing construction on real things but on inventions. Thus they had thought that all beings and hence all human beings must have existed in the germinative cells, and hence all beings which were to be born must have existed in the first man and woman created by God; hence the ovules of Eve must have contained the whole of humanity. It happened that this theory of the so-called ovulists set at rest, as it were, the minds of the scientists on this idea, and certain ones designing to dig to the bottom of it counted how many human beings there must have been in the ovules of Eve, and had calculated that there must have been two hundred thousand million human beings all wrapped one within the other.

From this came theories such as those of Haller which pompously announced "Nothing can be formed new" "*Nulla est epigenesis*," that is to say, no one part of the body can come before another part, but all the parts must be formed together. "*Nulla in corpore animali pars ante aliam facta est, et omnes simul creatae existunt*," or rather, there came to be constructed a theory which passed for a scientific theory.

When Wolf in Germany began to study the development of the embryo of the fowl and recognized that a cell existed which is divided into two and then each one of these two into other two, which makes four, and these four become eight, and so on, and that then from the subdivision of these cells come various strata which he called germinative tissues, from which all the organs arise. And thus he set forth, not a theory, but a fact; that is, something definite was decided which was studied through the microscope, which could be reproduced, which could be seen. But such a fact of observation of the real simply made

all the scientists of the time smile, and they replied "It is impossible because one part of the body cannot be formed before other parts of the body, and all the parts are formed together."

Wolf said "Try for yourselves, look in the microscope and you will see these tissues." They said "These layers cannot exist because parts of the body cannot be formed before other parts, and all the parts are formed together." And Wolf not only had to emigrate and to go to St. Petersburg where he died in poverty, but he died without his work having ever been known or appreciated by anyone; and for fifty years it remained in an archive and it was only much later, when a person of no value, a German baron, thought of looking into this and saw that really there did exist these tissues, and said "These tissues do exist," but in a work which had no scientific value, that everyone said "Yes, it is true, it is thus that all beings develop." And then they went and reclaimed Wolf's work, which was a classic work, and which rendered his name celebrated.

But people had to pass through that given period, in this case about fifty years, and reach that mysterious form of inner maturity, which allowed of their seeing the existing, the tangible. Hence, in order to see, it is not sufficient to believe, but there must also be a certain mysterious ripeness. A preparation is needful. in order to see, which should not be only a sensorial preparation. What would seem to be indisputable proofs such as the meteoric stone or the layers in the tissues which develop before the eye, are not sufficient to convince man. The Gospel says too that in the miracles of Christ all did not believe, but those who could see them.

There are other interesting facts relating to what may be called the arrested development of the collective thought, and hence to the difficulty of the development of the thought in its progress. There are singularly interesting contradictions in the scientific theories, especially of these later days, which contradictions are held to by the intellects of thousands and thousands of intellectual men.

Certain of the contradictions are found in Darwin's theory and in kindred materialistic theories, for instance this: The function creates the organ, but there is no function without an organ. Now it is very strange that the people who did not believe in a stone weighing ten kilos or in the layers of tissues can very easily hold to such a contradiction, and it is known that the statement: There is no function without an organ was opposed by the ancient dogma of the survival of the soul after the death of the body, to which dogma humanity was attached as the most grandiose statement of eternal life. Such a statement must therefore destroy a faith which represents a hope of life.

If the function cannot exist without the organ, how then can there be a function without an organ and that strong enough to even create an organ? And yet the whole biological evolution explains itself by such a statement: the animals and plants were formed and complicated, forming new organs every time that a function was necessary.

Now for many years the whole population of the intellectually elite has held to this without perceiving this contradiction. And yet the stimuli to reasoning were powerful; there existed the whole past of humanity in the aspirations of conscience towards immortality on the one side, and on the other the non-existence of any fact which should

23,17.

materially prove the creation of new organs in the living beings. And yet the simplest labor of logic could not react; and men unconsciously held within themselves to this contradiction, as many men unconsciously cling to sin within themselves. For this reason the progress of thought experienced a check. Let us cite another analogous contradiction; It is well known that Darwin's theory attributes the transformation of living beings to the environment, in contrast with the more modern theory which attributes it to the inner power of transformation. Now in the epoch in which Darwinism was fundamentally characterized by this, that the environment is what produces the transformation in living beings, it was said that Lombroso had applied the theory of Darwin to the interpretation of delinquent personality.

What did Lombroso say? His statement is well known. He said that the delinquent is born delinquent, so much so that the word "Born delinquent" which indicates the congenital origin, that is, the inner character of the delinquents, comes to us from Lombroso. Now all repeat that Lombroso in founding the theory of the born delinquent had applied Darwin's theories, which was evidently a contradiction. Today, rather, it may be said, that Darwinism is applied to the theories of criminality because great influence is attributed to social factors on the criminal personality.

Even from these brief remarks, which may lead to an interesting study on the phenomena of the intellect, truths may be recognized which are lights, guides, and which may be taken into consideration in dealing with the education of mankind. Hence we can hinder men from

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accomplishing simple reasonings which, however, seem to us results of genius and which would be possible to every mind, because indeed when we hear this reasoning repeated we do not say, as when we are reading Dante "I never could have written the Divina Commedia," but we say "How is it people never thought of that before?" And we reduce men to such a state that they are not able to see proof: so that face to face with certain phenomena of incredulity we are obliged to say "These people have they not eyes to see?"

Thus there must be something which hinders us from seeing the real, the existing, that which we can prove. Now if it is possible for such a series of errors to reduce mankind to such a strange incapacity as to be unable to perform slight and simple reasoning, and to be rendered blind to proof; we must take these things into prime consideration, more even than the method, which we hold to so that one may become a mathematician, another may become a doctor, another a philosopher, since as we have seen from history, that really in becoming doctor, philosopher, etc. that simple quid may be lost which survives only in genius. In giving intellectual content to mankind we certainly injure something vital in the minds of men themselves, the inner life is injured, perhaps in many it is destroyed by that same culture with which we think we are building up the human intellect.

AND then, indeed: "If thine eye offend thee pluck it out, but save thyself." And vice versa, if eyes are useful to you in saving yourself try to see the greatest amount possible in the world. Then there must be something fundamental to take into consideration in this path, a special respect for the personality, so that it may turn out gifted and may not be cut off.

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There exists something which, if it is not respected, all the rest is vanity, for instance, the science of the anatomists, of the oculists, of he who does not believe in the beliefs of the multitude even if the stones fall at his feet.

At the same time it is seen that the living worth of the intellect is such a simple, such a small thing, that to produce, it must be accompanied by other qualities, such as the courage of Christopher Columbus, the patience which tries and tries again in an experiment, that hence we may tend to pile up an immense Castle of Vanity in the mind of man, as much so if we give culture without respecting the laws of his inner being, as if we do not accompany culture with all that which renders this culture active for the progress of humanity; that hence the problem of the education of the intellect is a very grand and vast problem, and which forms part as a single unit of the problem of the development of the inner life.

Now we may say that in these latter times positive science with its methods of investigation tends to lead man along a road of simplicity in intellectual formation when it gives him the methods of experiment, of observation, and renders him circumspect but exact in reasoning so that reasoning too becomes a science and not only an accumulation so that we call that man a scientist who knows how to value and weigh by means of reasoning power and who does not dare to reason if he has not been able to gather up the truth and if he has not undertaken this special method of reasoning.

Since mankind began to follow this method we have certainly seen no more Divine Comedies but we have another kind of grandiose work representing the progress of exterior civilization, characteristic of our times, and which is due to this, that man has learned to read the book of nature and to discern the true from the false in external things and, in the brevity of a restrained measured reasoning has known how to discern within himself the true from the false reasoning, This man, type of a grand order of men, that is, the positive scientists of our times, (no matter how much it may be said of each one that his story cannot be written because it would be a too simple history often only an accumulation of actual facts, and as it were almost nothing) yet these men have created the whole of progress which represents a great transformation and which is a transformation greater than the Divina Comedia. For it may be said that it is not the labor of association of reasoning, by the mind of genius, which is full of imagination, but that it is the minute staunch labor of men who associate ideas, of divine imagination, because it is in the created environment that they seek truth, that is to say in life, in the bowels of the earth, in the natural phenomena and they associate and from these associations is created what is not a work of art but a great work of civilization.

And this points out to us the road which we must follow in preparing the men of today, because it is the men of today who must carry on this great work in which we are living.

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Lecture 24.

Let us take up again the former diagram, the diastolic arc, which represents to us a mechanical similarity, hence the nervous mechanism, the motor sense by which sensation is changed at the nerve center and transmitted into motion. This would be the main diagram of physiological nerve action, a characteristic example of which is involuntary reflex motion which, like all physiological mechanism, belongs to the same group. In the mechanism of the spoken language there is also an external sense organ in the hearing; a center where audible word images are deposited, which can be called the hearing center of speech and of the elaboration corresponding to the movements of spoken language, that is, the motor images of speech which transmit a motor impulse to the external organs of articulate language. Naturally this diagram, like the other one, serves only for explanations.

Let us single out the fact of the theory of the centralization of the nerves on the cerebral "corteccia", which is questioned and can be left aside, taking however this diagram, which like all diagrams relative to the mechanism of the central nervous system is a guide to our thought in attempting to study the analysis of certain phenomena. By means of this mechanism it happens; this is the fact, that hearing speech one speaks 2

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a marvelous fact for if we stop to think, there would be no connection between the organs of speech and hearing if it were not so. Hence like many physiological mysteries, it is explained by heredity, which is also a characteristic of man. One speaks, but in order to speak this mechanism must be established between sensation and motion. The mechanism of articulate language in the external organ of speech is very complex, for as you know there are the vocal cords, the entire vocal apparatus, and the delicate movements of the tongue.

Articulate speech takes place as a natural physiological phenomenon. We might pause to consider the mysterious formation of this so difficult and delicate a function and the obedience of these muscles, for instance, the infant's vocal cords and tongue which educate themselves in such exact movements, so delicate as to reproduce the spoken word. If we consider, for instance the educative effort which we must put forth with the little child in order that he learn to grasp an object, to button and unbutton, and if we remember that in all the fine movements of the vocal cords and tongue no one helps from without, then we should have some idea of the wonderful congenital marvel of this great phenomenon of language. There are natural facts which we see in process of formation and upon which we reflect but little, but merely to invite our thought; to meditate upon one of these facts is to deepen the understanding of the mysterious phenomena of nature. When, by means of all these diagrams, scientists seek to analyze facts they do nothing other than to seek to deepen their powers of comprehension.

The establishing of articulate language is not something which happens in a moment, as you know; there is the period of infancy in which it begins to take root and it develops gradually.

But the way to develop articulate speech is not by helping the child move his tongue or vocal cords, but simply emphasizing the hearing, pronouncing the sound of the word very often and as distinctly as possible. Then in this case we have a demonstration of the fact that a great motor impulse does really spring from the senses and, in this case, it would seem to awaken complex activities which, I repeat, are hidden in the science of hereditary speech. But when the child begins to speak he does not attempt a word, this in itself is a remarkable fact. In a child the first phenomena of speech are manifested by the pronunciation of some more or less inarticulate sounds and the mother helps him in this effort by repeating the sounds for him. For instance, she says "sssss", "ttttt" and the child repeats it after her. In a second period the child begins to pronounce sounds more clearly, which in turn are syllabic sounds as "te" and in this great mysterious effort the mother helps by repeating the syllabic sounds. This labor lasts a long time. Then finally the child pronounces some word, a very simple one, and this time he really begins to pronounce in a certain order, from simple sounds to those more complex, and from sounds pronounced by the most external of the organs of speech to the innermost, hence the labials first. Then there are the first words of two syllables which are a repetition of the same syllables as "te, te" and "mamma," etc.

When the child has made all these experiments, even to pronouncing a word, we do not yet say that he talks. In fact if you say to the mother "Does your child talk?" she will answer "No, he does not talk yet, he only says 'papa' and 'mamma.'" We say that he talks only when the word corresponds to a clear perception, when, saying a word, he knows he is pronouncing a word which corresponds to an object, hence it is the expression of a perception. Often mothers say "Yes, he talks, he recognizes

his father," though this is not necessarily so, but they say it because they first said "He does not talk, he only says papa and mamma."3

Gradually a language develops consisting in the pronunciation of words corresponding to objects and this is still another maternal teaching. Indeed the mother begins to teach the names of objects to a child that speaks so that he may acquire ideas together with speech.

All this represents the development of a mechanism and it represents a sort of exercise of these nervous paths, the centripetal, the centrifugal and the intercentral. This is a very important physiological moment, for there evidently exists, as is no longer the case in the years following the establishing of language, a special capacity for perceiving the most subtle sounds composing a word and of being able to reproduce them by the movements of articulate speech. So true is this that the maternal language is perfectly established, not because it has been pronounced by the mother, nor because of special race conditions which might in a certain sense be secondary. Indeed, if all of you, who are of a different origin and language live for long, for generations, in a country where the former mother tongue is not spoken you would acquire perfectly, as a mother tongue, that of the people among whom you live. Therefore this happens because at that definite age, that definite language is established. So if foreign languages were taught during this period they could be taught in such a way as to lead to perfect pronunciation.

In general we do not give much help to the child in the formation of language, we leave this task to the mother. Recently the intelligent mother has understood that she really helps the child in his acquisition of language when she assists the sense of hearing by an exact pronunciation of the sounds of articulate language, whereas there was a time when

24,5.

the mother sought to put herself on the child's plane and pronounce the word as the child pronounced it, in the imperfect way of one who is gaining a difficult acquirement. So we can say that the unintelligent mothers of former times retarded the progress of these children, making the acquiring of language more difficult and not only abandoning him in this effort, but hindering his progress.

This mechanical part of speech is quite a different thing from the spoken language in logical language, by means of which language men communicate with one another, especially when the spoken language represents the result of great mental construction. The language of culture and the primitive mechanical language are two things which are very widely separated. Logical language, the language of culture, should spring from a higher plane of mind construction, which must nevertheless make use of this mechanism which needs be established first. This mechanism represents a sort of physiological development, a function which is becoming established in the individual; the other represents the lofty utilization of an already established function. We might say that in the former case a dictionary is being made and in the latter a poem. It would be impossible, however, to give expression to the poem if one were not in possession of speech.

This development of the physiological mechanism is one which follows the natural paths, which is therefore slow, has individual characteristics, so that in noting a child's characteristics we ask when he began to speak and how his language developed. So it is counted among the facts regarding physiological development. Whereas the other belongs to the culture of the mind. Usually when there is a development of logical language man also makes use of written language, for a true

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analysis of language makes it possible to fix thought in such a way that this thought can gradually be elaborated, hence language can become complicated on a basis of fixed rules. Hence logical language develops best in connection with the acquisition of another language.

In our methods of education we have a firmly rooted prejudice and that is that written language must serve only as an aid to logical language and hence the written language should be given only when the intellect has reached that degree of development in the logical formation of ideas in which graphic language is necessary. Therefore they say it is unpedagogic to teach small children to read and write since they cannot make use of those acquisitions.

What I want to demonstrate is that, as in the development of the spoken language, so also in graphic language there must be two different periods, for in this language, too, we have a fundamental mechanism which must develop and become fixed. And this mechanism not being a natural one like that of the spoken language, nor hereditary in man, we cannot develop it easily as the mother does in the case of the repetition of sounds.

For written language also we can use a diagram analogous to that of the spoken language. Indeed a sensory organ exists, the eye, hence sight, and a center, the visual image of the word to which corresponds a motion, the motor image of the word itself, and an organ of external motion, the hand which writes. So here too there exists an arc similar to the others which represent phenomena relative to the mechanism of the nervous system. The sensation, the sensory center, the motor center, and motion, together with nervous paths which put the periphery into communication with the center and the centers with each other. Only

Here it is not the same thing, for it is not by having the child see writing that he can write, at least this is not natural, though we may demand it of the child. According to the common methods for teaching writing we claim that when the child sees a written word he writes it.

But if we remember that this language is not natural and that this diagram is not a physiological one but an acquisition, then from this alone we should realize that we would have to do marvels when we try to imitate nature where there is no natural fact. The greatest difficulty in articulate language is found in the movement of the muscles of speech and this movement we explain by the marvelous fact of heredity, whereas the movements for the written language, which are far simpler, are evidently not hereditary. And if we think it is necessary to teach children all movements so that they may perfect them; all the more reason why in this case we should prepare separately those movements which serve in the mechanism of writing.

So the establishment of this mechanism of writing must take place, a special education of the movements which prepares the motor organs to execute their new functions.

When we prepare the child to make the movement necessary in handling the instrument for writing and to touch the letters, we have him do an external work which does not proceed from the sense organ, but which is provoked by us on the periphery, and which is one of the many voluntary motions which can be analyzed from within, reproduced from without and helped by education. When the motor image of this movement, that is, the memory of muscular motions, the motor memory which should come with the muscular sensation of this movement, is something which moves from without to within; that is to say, it is the tactile sense

24,8.

and the muscular sense which are busy and which send on to the center the memory of some special movements, thus establishing a motor action which is not in nature, but which is necessary in order that this mechanism of the written language be obtained in a natural way. Now, as we have seen in a previous lesson, these nerves can be either centripetal or centrifugal, and, lo, we have made these paths permeable and established a soecial muscular mechanism which in this case, give us almost the same conditions as those which are, through heredity, natural to the spoken language, thus by artifical means, preparing these musoles to execute those certain given movements by which they respond to sensory stimulus.

Indeed, the visual image of the letter and the motor image corresponding to the letter itself are formed together when we have the child look at and touch the letter. For this reason, these two images are formed simultaneously, namely, the visual and the motor images of the written word. Thus we succeed in preparing in the nervous system a mechanism analogous to that of the spoken language.

There is no doubt that the motions corresponding to the drawing of the letter and to the manipulation of the instrument of writing are very simple in comparison to these others, and the establishment of a nervous mechanism which is almost taken for a natural phenomenon is quite possible in a small child. So, for heredity, in the relation of natural phenomena and heredity, we must substitute artificial phenomena analogous to those of nature in its relation with heredity and allow these faculties to become established freely according to the child's natural tendency.

Just as we do not say to the stammering child "Hurry because on such a day you must talk," so we should not say to him "Get this mechanism

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in order quickly for on such a day you must write." Hence we can never hope to establish this mechanism by methods which follow a given program, but by methods which permit of freedom.

Gradually the child sees the composition of a word and he is able to reproduce it when he possesses this mechanism.

We do not mean that it is fatal, that when a child sees writing he ought of necessity to reproduce it by writing, but we certainly do not prepare him in a way that such is the result. And as you have seen by experience, it is not the sensory stimulus which in this case leads to writing, but it is rather a sentimental stimulus which produces a motor explosion and there exists a certain degree of maturity in which these established activities have already prepared all the elements and the possibility for the development of the phenomenon of written language.

Since the child hears the words we dictate to him he composes them and writes them; so we can imagine a diagram in which the two mechanisms of language are fused. In fact, the child can write the word he hears, and since all words represent perceptions and these perceptions are ever increasing in number, we find added to all this besides the mechanism of the spoken word another, that of the written word. When he has come to know them the child can write those words with this combination of the two mechanisms of language.

So there does exist a period preparatory to graphic language the aim of which is to establish a mechanism corresponding to this language and this mechanism may be given at the same age in which the mechanism of speech is forming or is being perfected. I say "may be" inaccurately, for I might say, experience has demonstrated that this mechanism is formed at the same age in which the other natural mechanism of speech is in process of perfection.

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Especially in our language, this mechanism of writing allows us to greatly help in the perfecting of the spoken language, for otherwise it would be quite difficult to succeed in having a child analyze well the individual sounds of a word in order to perfect the pronunciation of the word, though he might be at the most opportune age for this. For instance, in the common schools where children comes from families having a very imperfect pronunciation and being with them dialectic defects, the school can do much to perfect the pronunciation.

Finally, the help that can be given to the perfect development of speech is clearly proven in a method of education with the establishing of writing, for we can take the word the child is to pronounce in practically all its details and develop and correct each detail without requiring on the part of the child, any effort which might seem an impossibility. Because, inviting the four year old child to analyze the sounds of the spoken word and then to repeat the individual sounds, we give those language exercises which we give, for instance, in correcting defects of language such as stammering, etc., which are very difficult exercises even for larger children. On the other hand, when we show little children a sign which stands for a sound or several syllabic signs, or call his attention to these signs, each of which represents a sound, we can separate the word and have each individual sound pronounced and give the consciousness of the entire sound of a well pronounced word.

So we could say that these means of developing the mechanical graphic language allows us to bring out, piece by piece, the whole mechanism of articulate language and to perfect it. Is this the way to form the mechanism of writing? It is my way, my method. While we are

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establishing this mechanism, of necessity we perfect the other, so that when the first mechanism of writing has been established it has necessarily perfected the other, hence it is also a method to help establish speech. It is an aid which the methodical school can give to the perfecting of the spoken word.

The child would need perform no mental labor aside from that of recognizing the letters of the alphabet and of an entire word, that is to say, at any moment the child may find himself in writing at the same point as that in talking, when he pronounces a word but does not yet know how to associate this word with the definite perception of an object, when the mother says "He says papa and mamma, but he does not talk." There can thus be a long period in which the child writes and recognizes words though he may not think of their meaning, as the child who wrote "Sangiaccato di Novi Bazar" and "Darmstadt."

Two accusations have been brought against this method which permits the learning of writing and reading: The first, that it urges the child to useless effort since it makes him learn a language which he should learn later on in the course of his intellectual development, useless because to know how to write is useless to one whose thought is not developed. The other accusation is that the child's intelligence is offended by bringing him a mechanism whose "raison d'être" he does not comprehend.

So, since there are two such opposite objections we will take the happy medium and be fair.

Certainly very strange prejudices exist. It would seem that the child, in order to write a word, should first of all know the meaning of that word, that if this is not the case it is useless that he know how to write and read the word, because it is thought that the written

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word must serve for reading it, just as it is thought that a story can be read without being well understood. If you have not understood it, why have you read it? You would say "I read it because it pleased me." And the answer might be given "Well, that is not permissible in certain restrictions of thought." In like manner here you write a word not knowing its meaning, and why do you write it? The child has written it in order to prepare the mechanism of writing, and so that this mechanism may later on be the servant of his thought, so that when thought comes it may come as does the master who has only to beckon to find his servants ready and fitted to serve him.

When we wish to teach the child reading and writing only in order to develop his thought, we put the child in a difficult position, for while the child's thought would express itself, it cannot and must instead labor to prepare a servant. It would be as if in nature language with its early defects were given us only when thought had been formed. If Nature had said to man "Think first and when you have thought you may begin to utter sibilants and after months of time to pronounce syllables and later still to pronounce dissyllabic words, to say mamma and tete, etc." while thought organism was already forming within, then, indeed, man would find himself in a condition of the scholar of today who begins to learn to write when he already knows how to think.

The injustice of this apprenticeship in learning to write is then two-fold. It is not only due to the unreasonableness of methods which wish to give this language first of all from without, analyzing the form of the letters, giving straight and curved lines to be written, etc. without any previous preparation of the motor organs, so that it is the eye which educates the hand, and that without any physiological

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relation between the one thing and the other. Not only this, but the fact that it must come just when the child's inner impulse would be towards something else. He would probably write an affectionate letter to his mother, and instead he must practise on strokes and curves.

If the child comes to understand the meaning of the words he writes and reads after he has for some time written them and read them, he will experience a great joy, he will discover that the gift which has been given to him apparently from within (for when a child has all of a sudden burst into writing he has written without realizing that he has been prepared for it) is a far greater one than he thought to have. Indeed, when our child writes a word he feels the joy of the phenomenon which is developing, of the gift from within, he says "I know how to write." He does not know whence this writing comes to him, or at least he is not conscious of having done anything preparatory to this written word, so that this written word is a gift and he rejoices in it greatly. It is an event in his life, just as it was an event in the life of man when the first steps were taken in an erect position.

But when he realizes that this written word has a meaning, then it is as if someone had been given a glass object and he suddenly awoke to the fact that it was a diamond, he goes on from joy to joy. And this is not an humiliation of human nature.

We think we see a humanity which, when thought has developed, has two languages by which to express himself naturally, for the first time he thinks, he can listen to man who speaks, and he can take the transmission of the soundless language which he finds on paper. As soon as at an early age, at that age in which the nerve mechanisms are becoming established, we can give the child both these mechanisms and the

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one perfects the other, then we shall see the child who, as if by a natural fact, at a given age, from four to five, possesses these two languages. The phenomena that arise from these new acquisitions are certainly a wonderful page in pedagogy. We have witnessed the great enthusiasm of the child in one of the most marvelous conquests of man; that of creating a new language which can carry great distances in comparison to the spoken language since it can be transmitted on paper and remain in print. It is true, that today we transmit the spoken word across space, but certainly the vocal expression of our thought must die with us, it is limited to our voice though wonderful instruments can transmit this voice from nation to nation. Only writing can survive our thought by years or centuries.

This written language is then a wonderful acquisition and it seems as if, with deep emotion, its significance were understood by the child. In fact we notice that the child shows the greatest passion for this written language. Not only is he seized by a great emotion when he begins to write, but even the objects which serve for this purpose, like the large cards with sandpaper letters, become very dear to him, and take the form of a victorious standard. We have seen children walking triumphantly, shouting victory, and bearing aloft these cards which have given them the first help. And we have seen the emotion of children who read the cards and recognize the word and their wonder, wonder which we ourselves no longer feel because for us the memory of the acquisition of writing is a thankless one. And also because we pass indifferently by phenomena which are too common. But the child who for the first time realizes that he is the interpreter of the written word which transmits thought, and he discovers this fact that the thought he

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believed to be transmissible only by word of mouth can be given in other ways, in silence, and that he can acquire this word and place it as a remembrance beside him or carry it away and analyze, this fact, this great discovery, this great emotion is one of the most wonderful facts in human sentiment. Man will perhaps some day recollect this marvelous fact, when for the first time, he understood that in the written words there was a story.

This incident happened in the school. While the children were beginning to learn to read, a boy went to school with a folded piece of paper which he had kept in his blouse, and he called a dear friend and said "Listen, you wouldn't believe it, but there is a story in this," and he read it to him. The other was filled with the greatest wonder. "How," said he, "can there be a story there?" Then this latter child hunted secretly among the books at home to see if he could find a story, and having found one in a book, he tore out the page, folded it, and he too, carried it to school. And without the teacher's knowledge, it came about that every child carried about hidden in his dress pages torn from books.

The child makes passionate discoveries in this environment during the period of the education of his senses, surely these discoveries of a new language must be still more passionate. I was thinking that perhaps some day men developing their imagination will have recourse to the memories of childhood in order to give an idea of the marvelousness of some incident in the life of the adult, since imagination is the fruit of the mind's great conquests and it creates the wonderful, the new, and the product of genius from what man has been able to gather from around him. I thought, for instance, of the kind of letter a man of the future might write who was possessed by a great emotion. An engineer who for

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the first time takes his instruments and full of hope for the future might begin thus:

I took my instruments with the feelings of a child who for the first time grasps an iron geometric inset and with great pride traces the first geometric figures on a white page. Perhaps I, too, like him have taken the first step toward a more distant conquest, not closely allied to my profession, the conquest of a new language which may survive me.

A company going forth to conquest might tell of it thus:

We marched forward in close ranks, carrying the standards in a delirium of excitement, seeing our goal near, like children who, at the first recognition of the letters of the alphabet, carried aloft the cardboard of sandpaper symbols, almost realizing that all their educated senses had attained the highest victory, the language created by men.

The man who for the first time understands another soul might express himself in this way: The first voice of the soul:

Yes, I have understood your soul, and it was as sweet a thing to me as is the joy of a child who reads his first word. What at first seemed a mystery took shape within me and revealed to me a reality.

An archeologist who is reconstructing some historic fact or some fact giving the outline of the life of a man of the past concerning whom there are no documents extant might speak as follows: Historic archeology as told to a sweetheart:

I have been able to reconstruct the story of that heroic personage the documents were a revelation to me. I keep them secret and am confiding only in you. Some day I shall make them known to the world, but at present I am experiencing the emotions of the child who, reading printed words in

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silence and solitude, for the first time grasps the idea of their being a story and he tears out the page, hides it like some precious object in his breast, and in secret confides to his best friend.

If spiritual people, when they wish to say that they have attained a high goal or have experienced great spiritual emotion, reach the heights of saying "I am like a child," if there is a way of causing an inner development of the entire human personality, we should imagine all these lofty things in the most vivid, most wonderful way possible, in comparison to a child, for in the child we see the great drama of life in process of formation and here can be nothing more wonderful for each one of us than to feel that some vital thing is taking shape within us.

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Lecture 25.

One of the most important objections which is made to this method, is, that the child by always following his own instinct will not become a man of strong will-power, as is necessary in life when man must have recourse to effort for the accomplishment of his own duty; and in every form of education the problem of the education of the will is enjoined, to which education of the will, almost all, unite the problem of moral education, because it is thought that to be moral, good must be recognized and followed. Also the question of free-will centers round this: Can or cannot man of his own volition make a definite decision as to his moral actions. And in all these discussions the point is departed from; or rather, this principle may be defended: That the will must be very greatly educated, so that man may be ready to follow the path of good and that it is needful to educate the will in every sense so that man may do all that it is his duty to do, and also in order to make efforts useful to him. The proverb "Volere e potere," "to will is to be able," agrees with these concepts enunciated from a scientific or pedagogic point of view.

It is an immense question, this question of the will, and its relation to moral education. I believe that we are in a labyrinth into

which it would be interesting to enter and then come out again; but to do so would require much time.

I would like to quote a sentence from Dante since I have quoted a proverb. The proverb says "To will is to be able," and Dante in his verse says *È Vuolsi così colà dove si puote ciò che si vuole.* "It is so willed there where (with God) is power to do that which is willed;" to point out where the Omnipotent is, inasmuch as this seems a quality proper to the Omnipotent, so much so that to distinguish it Dante said *È dove si puote ciò che si vuole,* "It is where there is power to do that which is willed." Whilst man cannot do all that he desires.

Thus we could draw back and reduce ourselves to modest limits so much the more that together with this great statement "To will is to do," we always make other statements that man is weak, is limited, is frail. The fact of contradictions would not be a reason for strife, or for the destruction of one of the parties, because frequently in a complex question truth lies in a kind of combination between the two visible extremes, and as such, comes to be grasped by the masses, who tend rather to sympathize with one extreme or the other; but in any case it is possible to discuss on a little more straitened ground than that which says "To will is to be able."

The psychologists analyze the will. They say "Will is certainly an activity, a voluntary act is an act of activity; this activity may result from a choice between varying motives; rather than do one thing another thing is done, and often these motives struggle violently within us, especially if facts of a passionate nature are considered." Then this will-power will be coupled with moral questions in this discussion; in any case we can in a general way say this: That in the volitive activities

there exists, if not a struggle, at least a choice between motives which induce the accomplishment of an act; and if there should be an impulse to accomplish another act different from that decided on according to the struggle of the motive, then also it is needful to know how to inhibit the action which ought not to be accomplished, which was not chosen. Hence inhibition forms part of this mechanism. And then there is the inner will which consists not so much in directing external movements, but rather the attention towards one motive or another.

But the problem of the will comes under the subject of decision. Everything depends on what the man decides to do and does after his decision; hence it is this decision which has great value in the whole life of man. But this goes further into the field of the moral life.

The question at least of free will would consist in this, whether man can or cannot decide between the motives of the act, or whether instead he is led by external or internal factors, but not voluntarily (in the sense in which we understand) to accomplish an act; but the fact is there, that is the point.

Now I see will differently from this. If we consider the social phenomena that are dependent on or in connection with the will we can note as a fundamental basis that the product of labor and of the social order are constructed on this fact: the continuity of a definite action. Thus for instance social labor exists because man can work constantly ; the family exists because constancy in the affections is possible; a man has a moral value inasmuch as he is constant to his promises. It is continuity which forms the fundamental part of the products of the human will; so much so that we who place will in connection with character say that he is a man of character

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ter who remains constant at his work, he who keeps his promises, he who does not vary in his affections and on the contrary ~~that he is a fickle man who is not~~ the fickle man, he who is not constant, is lacking in character.

The psychologists to explain in a primordial manner the mechanism of the will, have recourse to that species of arc which serves to recall the ideas. When outside of pure reflex, that is to say when movement does not follow sensation in a mechanical, unconscious manner, every other movement is voluntary; hence the will is called into play every time there is a movement. This, as a primitive fact; then in the successive self-formation of the mind it happens that construction is formed in the realm of the sensations in relation to ideas, because there exists the phenomenon of memory which allows ideas to persist a certain definite time and is that which explains what may be called the intellectual construction, because through the memory sensations are fixed the ideas are associated and remain.

Memory also arises up in relation to movements, not alone in regard to sensation; a movement accomplished once becomes easier in the successive repetitions to the point almost of being mechanical, which in ancient psychology was called the habit of voluntary acts.

Hence memory gives one of the phenomena of continuity — the continuity of images — their presentation in the realm of consciousness. It is this which permits of the formation of the whole mental content; because if the images were not preserved the mind could not construct: and man would be reduced to a purely sensorial being — capable only of perceiving what momentarily falls under his senses, and he would have at any moment to repeat the experiment as if it were the first time that he performed it.

Now in the realm of will we must recognise ~~the~~ an analogous phe-

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nomenon of continuity, without which the moral man cannot form himself, namely, character. An activity must be formed tending to establish certain determined and chosen acts, so that it may be possible to repeat them with continuity.

It would be nothing to define and choose the acts, if there were no continuity in executing them; and the importance of the choice and of the determination is constituted by a more fundamental, more primitive fact, which is the capacity for continuity. If this did not exist the decision, the choice, would be almost useless; man would continually have to decide, to choose, new acts, and as far as character, and men of morality he would not exist; nor could human society be constructed on such men as the mind could not be constructed in him who had only perceptions and no memory for their preservation. Christ too points out perseverance as a way of salvation, "He who shall endure to the end shall be saved."

Admitting this, that the fundamental character of the will consists in the possibility of persisting in the act, considering persistence as a fundamental fact, as a fundamental characteristic of the will, we may consider all the other characteristics which are cited as details of this. The ready activity, the choice between motives; the decision as to acts, the capacity of inhibition —of voluntary facts which have their value from the existence of this foundation in

If this is recognised the first step in educating the will should be that of urging the individual to persistence in a piece of work, of aiding him to accomplish a piece of work completely and to persist therein. This as fundamental characteristic, without which the first degree in the will does not exist, understood in the sense which must take into considera=

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~~the education which prepares man to social life.~~

Now this is a most interesting point for education; to bring about for instance that the little child should accomplish a labor and should repeat the labor at as great length as possible. We from experience have known that this is the first step to the inner construction of the psychic life; but to lead the little child to persist in acts and hence to the fundamental construction of his will, it is necessary that these acts should correspond to latent aptitudes, and to instinctive impulses of inner formation as we have seen in speaking of attention;

If we should desire to lead the child to persist in acts chosen arbitrarily by us — by means of an order, our work would be vain. We should indeed desire to invoke the child's will to follow us: that will which we have hindered from organizing itself.

If we wish to lead a child to accomplish an act and to repeat it, if all this represents the first step in the construction of his will, we ought not to turn to his will which is still unorganised; still less ought we to ask that he should do just the opposite of what is necessary to its organization— that is to say that that interrupts what he is in the act of doing so as to obey our will.

And here we find ourselves face to face with the problem: if it should not be we who impose this first act upon the child, then what will impose it? We must certainly have recourse to an inner force, to the instinctive impulse of the child, which leads him to perform a definite labor, this impulse of which Dante also speaks, so as to explain by means of a comparison what happens in the primitive formation of the mind, "Là onde regna lo intelletto delle prime notizie uomo non sape, nè dei primi

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appetibili l'affetto, che sono in voi, si come studio in ape di far lo miele".

The first ideas and the first motives come in man as the instinct of honey making comes in the bees, and the first incentives must have the same origin that the first incentives in living beings have, inasmuch as where nothing yet exists, creation alone can initiate existence. That is why in order to lead a little child to construct this fundamental basis of his volitive life, we must seek for his first longings in order to grasp it; and if the work is accomplished and moreover if it is repeated, this alone ought to satisfy us, for as the bees make honey this child constructs the man within him along such lines as are possible to him because "He can do that which he wishes only there" — but man is subject to the laws which define his limitations.

The exercises which our children perform, spontaneously remaining at a piece of work, contain all the elements which the psychologists consider fundamental elements in the construction of the will. Indeed the children are active because they are working, they must continually choose and do this as a contemporary exercise to that of the activity; at every action they must decide what they should do and they are continually obliged to inhibit definite acts. There are therefore exercises which may be called inhibitory exercises: for instance the silence exercise in which the children must inhibit every movement; for instance when the children have to walk and they hear that their movements make a noise and they must inhibit these movements. Hence we develop the activity of the intellect in all the child's actions and we lead it into an exercise which consists in the choice of certain actions and in the inhibition of certain others, so that all things which are elements or detail

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of the will exist in a continuous and inclusive exercise (as the details in the whole) in that fact which however is fundamental of persisting in work. The perfecting of these details of the will comes in the progression of the educative exercises performed by the child because the clearer his perceptions become in relation to things, the more rapid and certain will be the choice; the more he continues in his activities so much the more does the exercise render easy that mastery of the actions; the more the child is accustomed to make a decision so much the more he builds up within himself this special activity. As regards the inner will and the power of attention, the child performs just these continuous exercises of attention.

What then are the objections made to such concepts on the basis of other methods of education? In what other ways ought we instead to educate the will? Let us point out the other methods which there are for educating the will. We wish that the child by dint of an effort of will, should do the things which we think good, and we have faith in his will and we revert uniquely to it; and the child's will ought to lead the child to have characteristics more like to our own and to conquer those characteristics which are natural to his childishness and which we think bad. That is to say we would like that following our orders and not according to his own inner formation the child should become a man.

As to the direction of our orders they are principally guided by ideas of external opportuneness relative to our well being as adult individuals. The principal things we ask of children are these: - to keep still, not to be capricious, and not to tell lies; because the useless characteristics which we find in early childhood are these: - the child

moves in a ~~disordered manner and touches every object~~, that he has not a continuous direction in his will so that he is capricious; and that he is not truthful in his statements. Now we already know from our experience that the child ought not to stay still but ought only to order his movements; and that the child makes disordered movements because he has not yet set them in order and with his continual movement he tries to set them in order, he makes the attempts of one who not having been born clever in his manner of moving himself must learn by experience and try by disordered movements to find the road of order; and when he touches every object we know that he above all is exploring the external environment so as to possess himself of it. Not only does he experience in the environment the tactile sense in touching everything but also sight and hearing - bringing his attention to bear on the relative stimuli which exist in the environment. But until the child hears and sees he does not give adults a bad impression but only when he injures our rights that is to say when he makes his motor and sensory experiments by means of this fundamental mechanism of the nervous ~~life~~ life, by touching all the objects around him. If the child making his disorderly experiments in gathering visual and auditory stimuli from the environment were to injure the comfort of our existence in any way we should have to register other categories of childish "naughtiness" and we should have certainly tried to assault the child's will to keep himself from such experiments, as we have tried to keep him from the tactile and motor, repeating to him, "Stay still. Don't touch. Obey us, so as not to be naughty."

It seems clear to me that the only method of having a child keep still is to teach him orderly movements and to satisfy the craving of the

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tactile sense together with the cravings of the other senses, aiding him to take what the environment can give and to take from the environment in an orderly way, because by means of order his mind is constructed. So that we do not find at last the child who keeps still, who withdraws from the world following our invitation and the call to his will, but we find the child who takes his place in the world in a manner adapted to his activities.

Thus the principle of responding to the child's every disorder with an offering rather than with the task, with an object rather than with a call to that formed will which we suppose is existent in him although experience tells us that it does not exist, forms part of practical education.

As for not telling lies, a lie is recognised in the child as a species of childish characteristic due to the fact that the child has inexact perceptions, and due also to mental weakness, as for instance there exists the lie of the hysterical persons who tell lies from a species of characteristic mental weakness, and thus there is a characteristic mental weakness of the child by which he, not having exact perceptions, having few or no powers of logic and also having no great means of defence has recourse to the lie. And as it has been found that in the judicial testimony of children given in good faith they have told lies, it is recognised that the lie is frequently due to an imperfect perception of things in childhood.

Now one way of correcting this lie would be not to say to the child, "Don't tell a lie," addressing ourselves to his inner will; so that the child may not tell lies we must help him in the formation of his

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mind so that his perceptions may be as clear as possible and that he may take from the environment and especially from us all the truest and most authentic that there may be in its truth. But if we think to have the child correct himself of lying whilst ourselves giving him false perceptions in education when for instance we give to a cube the name of horse, or to a toy the name of an imaginary being we only continue to tread the road which leads the child naturally and rapidly to falsehood; and to correct him we ought not to say "Don't tell a lie," but give him a special education for his mind filling it with clearness and truth.

As to the child's capriciousness, it is exactly the characteristic of one whose will is yet unformed; it is in this fundamental aptitude for continuity of the actions that as I said its foundations exist. Its foundation exists. Capriciousness, fickleness are manifestations of the unorganised will, as disordered movements are manifestations of motility as yet unco-ordinated. In the diseases of the will in adults— as in the hysterical we find fickleness: that is to say that in what is not yet formed and in what is being destroyed there is a similarity of manifestation. But how do we respond when the child ^s shows by fickleness that he needs to; exercise his will in certain constant continuous acts which may organize it? We punish him, thinking that that may correct him of his fault and make him miraculously acquire that which he has not.

As to how we appear to him, we ought to question the child if it were possible after the judgment he passes on us. Let us imagine a child who was a little bit conscious of what happens within him according to the dictates of his nature. He has goodness, and the good impulse of wishing to order his movements and he tries to do something and sees the

object which would aid him to do it but the adult keeps him from it, perhaps he wishes to dress himself, but is slow in this work, is clumsy; he finds the adult who prevents him. He may say: "Why do you keep me from it, what am I doing that is bad? What you are doing is capricious."

In schools for little children the lessons last ten minutes and then must be followed by a pause or a change of lesson, instead we see by experience that the child remains one hour, one and a quarter hours, at the same work. Hence when after ten minutes the child has hardly begun his work the adult interrupts him to make him pass to another piece of work. He might say, "Why when I was working do you interrupt me and make me do other work? You are capricious."

And the adult's action becomes more cruelty than capriciousness when he expects the child to obey him in movement and obey in the mastery of his movements when instead he might reply to us, "But exactly what I am trying to do is to order my movements! How can I respond by an act of will if you hinder me from doing what is exclusively necessary that my will may be constructed? How can I respond to your order for obedience in my movements if you hinder me from making myself able to move in an orderly way? "

The same thing happens when the child who has developed his sentiments wishes to stay near his mother, but this being the hour to go walking she sends him out. The child might say, "What, I love you. I want to stay with you and you drive me out? "

In Quo Vadis there is a scene which makes me think so much of what happens with the children: there is a slave who loves Petronius; Petronius wishes to present this slave to his friend. The slave who

loves Petronius begs him to let her stay with him. Petronius thinks this is unbecoming a slave and has her given twenty-five lashes with a whip. The next day he asks her, "Did the punishment do you good?" And she then draws near to him begging him to keep her by him.

Very often we respond in this way to a misunderstood explosion of love in the child. We say to him, "Go," and we give him something which to him corresponds to the twenty-five lashes, and yet he comes back to say, "Let me stay by you."

This does not prevent our trying in every possible way to develop the child's affections. The abnegation which we claim from the child in all these cases is not an impetus to the education of his will. It is not an effort of will which we develop in the child when in these cases we tell him: "Renounce your impulse and do what I tell you," because our arbitrary pretension in respect to the needs of childhood has to the child the effect of tyrannical capriciousness, which hinders him from developing him from within himself that which ought to develop, which ought to complete his evolution, to be his exercise.

Maybe the wild beast trainer develops the lion's will when he encompasses him with a cage to prevent his moving and then deals him blows to make him move? And when he who is unable to move responds by snarling, the trainer says, "The wild beast is fierce, ugly," and beats him to calm him, maybe he has educated his will and created goodness in him? Thus when we hinder the child from all his spontaneous activities and demand that he should act as if they had been developed, and then if he responds by rebellion, we say that he is naughty, and we should like that his goodness consist in repressing what would be his nature so as

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to pay heed to us, we are not educating the child's will but we are seeking to tame it.

Now we know that the tamed creature has lost its natural characteristics, and has fallen into a degraded state of slavery which impoverishes it. The tamed wild beasts have lost their characteristics and the slaves had cowardice as an inner sign of their soul, and not the higher gifts which ennoble man. The slave in following the caprices of his owner destroyed within himself the qualities of the man: he annihilated his own will. Thus we ought to fear what may happen to the child in the development of his will. He has not a real director in one who says to him, "Do such a thing," because if the director does not follow certain definite lines which are the natural lines he is a capricious man, he is a tyrant, not a director.

One of the men who has given the highest proof of will-power, Victor Alfieri, was a victim of a lady's caprices who made him waste time taking him with her to society entertainments, for example to the theater, to conversaziones, and so on, and she did so directing his acts with certain capriciousness. Now Victor Alfieri who was a man of great will-power courted this lady; he felt however that in following this lady he lost so much of his volitive power that he wanted to conquer himself just in this, because he felt that if he married his will would have to follow the caprices of this lady rather than his own impulse. Then it was that Victor Alfieri shut himself up in the house, cut off his tresses without which in his time he could not go out without ridicule, and had himself tied into an armchair, so strong was the attraction of following this lady; that is to say to protect his will by not going out of the

house. And after leading this life for some time, which showed a great power of will, he thought of studying and said, "I will, certainly I will." Then he began to study and then became the celebrated man whom every one knows, whose celebrity is also greatly constituted in this assurance of will. The volitive power of Victor Alfieri was for the defence of his own greatness. By setting himself to a steady, persevering labor which developed his latent talents as a poet: this is the will=power which we admire in him. But according to the ideas which we hold on the subject of child=education we ought rather to admire that Victor Alfieri who sacrificed his latent genius to follow the caprices of the lady.

It may be said that Victor Alfieri made an effort of will in renouncing the inner impulsion of genius, which would have made him a poet, to remain in the theater=box or at a banquet and that by making such a series of renunciations he showed himself to be a man of will=power. But he felt that in this series of renunciations he broke his will, lost the real good which he possessed and so he conquered submitting himself to the tyrant who wished to subject him.

Then when we wish to try and develop will=power in the children we must have a guide which will not be our own caprice and also have as gold this fundamental fact: -- that the will grows strong, develops by exercising itself in a continuous action; and in the period of the child's formation the impetus to this continuous labor must have an incentive in his natural activity, in his tendencies which lead him to the formation of his personality. Hence not a command but a science must direct in aiding the child in the formation of his volitive powers. If we wish to admit that these methods for setting in order the inner personality of

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the child and for making the child remain constant at his work are more practical than those other methods which are simply limited to giving orders to the child this principle may at least be established in the education of early childhood, that is to say in the period of the formation of the child's personality. The child must first be formed; this must certainly be the starting point. As to the education of the will in the succeeding years when there no longer are these instinctive impulses as basis of work, that is when the individual is already formed in his primordial activities and is in a more advanced period in which he has not only ~~the~~ to follow his own impulses but external necessities what will happen? The objection which many people make is the following: if little children are accustomed to following their impulses what will happen later if they always continue to follow their impulses? These children will have no special education of the will, but will do what is necessary and what life imposes.

Meanwhile so that the child can continue to act by his will-power it is necessary that his will should be strengthened and formed. To strengthen the will is to give a foundation to its construction; to construct a will in the child, the will of his mechanism will be to prepare it to will successively. Preparations are not always direct, above all in the phenomena in creation, in the phenomena of formation. It is not stated that to lead a man to do later what is not according to his impulse we should practice him from infancy up in conquering his innate impulses; because innate impulses in the child are the impulses which tend to consolidate and to form his personality. So that only when this personality is formed and organized will he be able to do other things

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and to adapt it to the eventual necessity. The child has as his task the formation of the man, the development of himself- this is his production. Man then must produce around himself. Man and the child are diverse and the one prepares the other, but has not the same laws as the other. The best formation of man exists in the best formation of the child, but the finest child is not he who most resembles man. Almost the whole form of development is indirect. Let us begin with the first creation of man. We do not make a man by studying anatomy and then constructing him, but the first sign that a new man is to be born is a sentiment sung by the poets; is a sacrament according to religion; is the fundamental social institution according to the civil law.

When man is born he must prepare himself for walking, and it is not in exercising his legs that he does this but by following his natural tendencies in the best possible way, for instance by sleeping and by drinking good milk. It is beyond doubt that man prepares himself for walking in this way. It is certain that if it were said that man in order to learn how to walk must learn how to sleep and to eat we should laugh; but undoubtedly in a certain period of life man so as to learn to walk must do nothing other than to sleep and eat.

Thus in order to have the child grow taller it is certainly not necessary to pull him by the feet and the head, but it is necessary to nourish him and to place him in good hygienic conditions. So that the child in an environment full of causes of infection may not fall a prey to sickness what must be done? That he should grow up in good health as far as possible, that he should not fall sick in the early periods of his life, when these sicknesses would be fatal to the succeeding robustness

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of his body. No one thinks of educating the child in not falling sick, by having him fall sick artificially little by little with many little diseases whilst he was of tender age thinking that thus he should be able to face many infections in the environment but it is health which can enable him to conquer disease.

Now also in the inner life there is a formative period for that which may be utilized later on, and if in this period of formation, the formation itself should have followed its natural lines, it will be organized in the best possible way, this inner organization will be more ready for the encountering of obstacles in the environment and for conquering them.

This question is very complicated and to develop it in a convincing way certainly this brief talk is insufficient; but this indication may perhaps accompany you in the experiment of the education of the children with this method, having as goal those phenomena of the inner life which is developing and the organization of the will.— Also in my book I try to illustrate this question in the chapter on discipline which I have no time to develop here.

Indeed it may be said of this question that it would be well to speak of it again in time to come, especially after we had experience and the comparison between the various methods of education of this point of view.

One of the great complaints made today by the pedagogists in all congresses is the lack of character in the scholars, the lack of activity, the lack of spontaneity in work, etc., Now you will perhaps be able to convince yourselves by educating little children with this method,

that decision, character and will are formed spontaneously by the means which we give and above all by persistence in the work. Surely we cannot claim that man can learn to decide when we always decide for him, that he can learn to be active when we accustom him to inactivity, that he can be prompt in his choice when we hinder him from choosing because we wish to choose ourselves.

And whilst you are making these experiments and these comparisons I too shall be working to develop this idea.

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Lecture 26.

We have arrived at our last lesson without having touched upon one of the principle questions which concerns education, without having hinted at this sort of void which all find in this method, that is to say, moral and religious education. However daring I may generally seem in my affirmations, yet I find this subject so complex and deep that I have not dared touch upon it, either in my book or in my methods of common education. If I talk of it now in this last lesson, it is not because I pretend in so short a space of time to fill up this gap, nor because, in the time that has intervened since I wrote the book, I have found that which does not exist in it. I only speak of the matter because I deem it necessary to show that I do not overlook this argument because I do not recognize its importance, but only because I do realize its depth.

Moral and religious education is generally spoken of also for little children, and I myself during the short time of my latest work among normal children have received many objections on this subject by the parents of the children and by the students of pedagogy. I remember how when I had the Case dei Bambini in the San Lorenzo quarter,

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which is also inhabited by immoral people, and where consequently children found an environment very unsuitable to their moral development, I was reproved for the fact that I did not seek to bring some light to the souls of those little ones, and when I asked how I could have done it they replied that we could do it by telling moral stories and songs with religious stories and such like.

To give children moral education by example from stories, also from the life of people surrounding them, is to interpret moral and religious education just as all other educational questions are interpreted, that is to say, we take it for granted that the child before us can be enlightened by the word and that, ~~if he~~ desires it, he can follow our advice in practice. Instead my method of education is not along these lines, I do not consider the child before me as a being whom I can so easily guide, enlightening him by my word, but I consider him as a being having within himself forces which must develop of themselves, over which I have no power, and which I can only assist in their development. For this reason the child's education began by the education of the senses and the exercise of these senses towards autoeducation developed a great portion of the inner life, including also the will.

My understanding of moral education leads along similar lines, I find great analogy between what moral education should be and what the intellectual education is in my method.

When I spoke of the education of the senses, I said that the sense of pain had been considered one of the senses but that in reality pain was not a localized sense, although it responded to excessive sensory stimuli such as too strong thermic stimulus, excessive pressure, too bright a light, a strident sound, etc. This is not in itself a sense

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all the more so since the inner organs can give pain, and we might consider the feeling aroused by stimuli which produce pain as they can also produce pleasure according as the stimulus is harmonious or not, suitable or not to the sensory nature. The pleasure which some forms of sensation give us is due to the very fact of our natural personality, and it is because we possess such a sensitiveness that it has been possible to produce works of art which spring up and are bounded according to the mysterious guidance of an inner enjoyment in man. The harmony which the works of art and of music have in their ensemble is founded on an agreement, on a measurement which is given by the sensitiveness of the artist, and this measurement arises from the fact that the senses know how to ~~indicate~~ the beautiful from the ugly. The greatness which comes from the works of man is an exterior reaction of such capacity as to feel the beautiful as the forms of life in nature are decided by divine powers which we call good.

The education of the senses is the foundation of the entire intellectual organism and might be called the intellectual material. So that there can be neither ideas nor imagination nor any intellectual construction if we do not presuppose an activity of the senses, indeed the senses in their manner of being active and their power of reacting to the most delicate sensations, of taking the beautiful and rejecting the ugly in an ever increasing profound detail, in this consists all the preparation of the intellectual organism.

While our intellect is developing our sensitiveness should develop, for it is our sensitiveness which causes such development of our intellect. In this development we have the possibility of always gaining more perceptions from the external world in a measure as there is harmony with

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our senses, with what our senses perceive as harmonious, so that aesthetic triumph goes hand in hand with intellectual triumph. And they both come from the refining of the senses. Just as we could never imagine a great man, a genius, a benefactor of humanity in a being who possessed neither the tactile nor the muscular nor the visual nor the auditory senses, who in short had no way of taking perceptions from the external world, so we cannot conceive of any abstract thing being created by the intellect without there being some means of communication between man and his surroundings.

Now the sensitiveness of our senses is not the only sensitiveness, these are not the only sources we have of joy and pain, but there exists in that realm which we consider the moral realm another form of sensitiveness which I should like to point out as the one fundamental, in an absolute sense, to the moral education, just as the education of the senses is fundamental to the education of the intellect, that is to say there exists a special inner sensitiveness to something which we judge to be good and to something which we judge to be bad. And this judgment which we make later with our intellect, reasoning, and wishing to pass judgment, we have already made through an inner something which can be compared to sensations. We have experienced a feeling of joy of peace and tranquility in certain moments and at other times we have felt remorse and have realized the lack of peace and of inner joy.

The word conscience is a word of which today general use is made by psychologists in talking of the mind, by moralists and by the religious is limited to this sort of inner sensory organ, if we may call it thus, sine materia, which gives us these sensations of pleasure and of pain, which are sensations of good and bad.

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We can say that just as light and darkness , a harmonious note and a strident affect in opposite ways certain of our external organs of sense, just so there are facts and reactions which affect this conscience, this inner sensibility with one sensation or with another quite the opposite. This idea is certainly not mine, it is the oldest idea of moralists and of religionists, only I say that it not the idea which has had the greatest credit in the field of pedagogy and of the education of children.

To keep alive this power of feeling, to refine it, this is the basis of moral education. In society we see people who speak of morality, but who may have lost their sensibility. Indeed we often look with amazement at human beings who are on a high intellectual plane and speak of morals and who yet have a certain lack of moral sensitiveness, which reminds us of people who, not having an educated ear, can listen to a strident sound without shivering, and who, not having an educated eye, hesitate as to what opinion they should give on a bad drawing. We sometimes find ourselves before people who, as concerns the moral education are like the cutaneous sensibility of the idiot who leans upon the stove and burns himself without realizing the fact. Today in psychiatry and in criminology the "moral sense" is spoken of and such a concept in part corresponds to the sensibility of conscience of the moralist. Only that positive ~~conscience~~ limits itself to observing abnormal subjects in relation to such sensibility, making obvious researches into the antisocial feelings and speaking of the "moral imbecility" of certain criminals as compared with intellectual imbecility of the deficient ~~whose~~ external senses are blunted.

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But the concept of the moral sense of ~~the positive scientists~~ as the ancient concept of the conscience, moral, sensitive to good and evil, has not yet reached a rational method of education. How can we give the education for this sense? Well let us confess that we are face to face with a problem, and let us admit that a problem does exist. This, at least, will do away with the illusion of making people moral by talking to them of morality. If we think that autoeducation is necessary for the organization merely of ideas on reality then we should see before us the immensity of this field of inner formation in order that individuals may be able to refine this sense and keep it alive.

In from earliest childhood we give false ideas of good and evil we cannot walk along the straight road. Who does not realize that our children are slandered for we consider as evil so many things which on the contrary are good? When the child overcomes our error toward him, our error which hinders him in obeying his laws, which are the laws of his being, because we prevent his self-formation and he conquers us and forms himself in spite of us, we say he is bad and disobedient, and we would wish to teach him to be obedient to us without ever thinking that he is obeying God and the sacred laws of his being.

It is very difficult for us to study the child and to see by means of what motor exercises we can start him on the natural road of his tendency in the inner formation, along which he will find the discipline which he seeks for his movements, and to follow the child gradually in ~~the slow~~ but wise formation of his requires from us a labor of great patience. This shows us that all educational work is a long labor of education and self-denial.

A teacher who in the Case dei Dambini says to the children "This is good" and "This is bad" safeguards them in the most delicate way possible from evil, permitting them to develop freely in what is good without in any way placing obstacles, this teacher we can say, if she does not give moral education, at least she begins to educate, if you will pardon the expression, moral sensory organs and to classify the facts of moral conscience.

Certainly we cannot treat morality in speaking of muscular education. Indeed I should not mention it, but they do in the public schools from the moment when they call the child who moves in a certain way naughty and the one who is quiet good and from the moment the idea of good and bad is associated with facts which in reality do not contain either good or bad. In a general way we might say that if we believe a child should develop himself according to his laws of life then we should consider as good that which helps life and as bad that which hinders it, in this case we should have an absolute good and evil, namely, the good which causes life and the evil which leads to the road of death, the good which causes a maximum degree of development and the evil that which even in the smallest degree hinders development.

To know how to keep this inner sensibility alight and to refine it, this is what we should most seek to do. Perhaps our attempt on children from four to six years old is not very rich in material and for that reason this moral question touches man when older. In truth, if in this period of formation the child has not yet coordinated his movements nor taken from the environment by means of his senses the material for his mind, it will be very difficult for us to really give him such a moral education. However we should have a fine power of discernment

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so as not to destroy all that in the child has a significance of inner sensibility, remembering that the child gives this sign of inner sensibility by his expression of sentiment, by his spontaneous acts and not by a passive obedience to our commands. That is to say, he manifests this reaction in a state of liberty and we should not find it in an order which we have arbitrarily established in a school.

For instance, I found myself with a teacher who wished to give children a moral education, in the sense of having them love one another, of having brothers love their brothers, and she tried to exhort the children to this love, and I remember how one day she had her children play a Froebelian game. There were two brothers, one larger and the other very small, and, as the latter could not play with the other children the teacher wished to take him aside. The older brother rebelled and did not want to desert this little one, but he placed himself in front of him having the little one hold with both hands to his apron and he held out his own hands right and left to his companions so as to make the circle; and whilst walking round and round he looked with tender care at the little brother so that he should not fall. The teacher thought this child obstinate because he had not done exactly what she told him, whereas the child really showed in a touching manner an inner sensitiveness which should be developed.

I have heard teachers tell stories and exhort little children not to think only of themselves, but to think of others, to love their relatives, their mother, etc. ~~On one~~ On one occasion I saw sweets given to poor children who at once thought of their mother and saved some for her. The teacher said "Eat them and show the lady that you like the gift." But the child did not wish to, for he wanted to carry the candy to his mother and the teacher in having the child obey her did not

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notice that he was showing his sentiment. And we see in many poor children this fine sensibility. Not ~~less~~ ^{as much} so in the wealthy children who are educated at home and ^{also} who certainly must endure the same domination for obedience on the part of their parents!

We cannot judge children's actions if we do not understand the entirety of their education, so we need be studiously alert to respect all the inner acts of the child's sentiment just as we respect all his external actions, and just as we have succeeded in turning the instinct for handling objects into movements valuable for the development of his mind so as to lead him to write earlier than other children without effort, and on the contrary with pleasure, just so we can, following the child's spontaneous manifestations of inner gentleness, make the discoveries which are necessary to refine his moral sense.

If we are more watchful of him and wiser about him we can give him this aid of preventing him from doing what is really evil, but before judging as to what is really bad we must have put the child in certain special conditions in which he would develop naturally, for if we place the child in a state of slavery and see he is rebellious, we cannot judge of him when he presents himself in a state of agitation and disorder if first we have not freed him from slavery. We have seen that our children follow spontaneously a marvelous road of discipline and when they have gone forward along this road of discipline, it is nothing other than the laborious establishment of an inner order. These children become obedient not only to their teacher but also to their little companions, that is, it seems as if the child has hardly coordinated his movements before he tends to become one with other individuals, almost as if obedience were a part of this order which has developed.

In society, too, we have the great phenomena of obedience, man naturally seeks another man, and of this I speak in my chapter on discipline. Many people have objected to this method, that it omits to educate the social sense, saying if you bring it to pass that children instruct themselves individually, how can they later on be at their ease in the society of man, for they must live in society, not in solitude. If you do not develop in them all these feelings which develop in collectivities and which permit man to live with his fellow man how can you really fit a child for the social life which he must live.

This is certainly a strange question for what to the children do in our schools? Do they not live together? do they grow up in solitude? Yet it is an off-repeated objection and is similar to another objection which I have heard from the intellectually elite: how will these children with such highly educated senses be able to live in an environment where there are so many strident sounds? But these children who come to school are the same children who hear the shrill noises and walk through the noisy streets. They are already in this noisy environment and do not have to go there when their education is completed.

The children who come to our schools and who together thus grow up well fitted for the social life, and if there are social virtues which should develop, they will develop at that moment when the child must of his own accord adapt himself to these virtues. Rather I would make the objection: How can you wish to fit children for social life by leaving them seated at benches and having them do by main force what you command? What will these children do when they go away free? Not by keeping children quiet to listen to someone who speaks, be it even of morals, will they learn all that presents itself in life and which later

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on each one must of himself overcome by experience. it is experience which will form social man, therefore having the children together in school it is surely not possible to say that we wish to bring them up like men of the wilderness.

In these social relations, that is, of each child with his own companion, there are many moments in which this inner sensibility is put to the test. The teacher can direct, seeking to direct with the same purpose if possible of always refining this inner sensitiveness. You will say, How can this sensibility be given and be refined? That is impossible, it cannot be done, if it does not exist. It would be like setting ourselves the problem ~~What shall we do~~ so that the child should see the red, the green if the child does not see it? If the child does not see it you cannot make him see it. The child sees, that is why he is capable of education. Do not preoccupy yourselves with the child's sight in this sense, for he has inherited it and it is because he does have it that you can educate it. And how educate it? Make him see the red and the white. But ~~do~~ you create the red and the white? No, these colors are everywhere. And thus the attention is called to the red and the white and we say: this is red and this is white.

If our action were not so slight we could do nothing; we can create nothing. Certainly we need to know how to recognize colors and to be able to distinguish the red ~~and~~ its gradations and the green in its gradations. For instance, in our didactic material where there are sixty-four colors the teacher ought to know the sixty-four colors at least. However, if she does not know them well it does not matter for the child will come to know them by himself. What matters is not the teacher but the sixty-four colors. What matters is that the child should have health.

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sight and that he can see. Certainly if the teacher knows the sixty-four colors she can oversee the child better; and that is enough. She can give the names, which still further recall the child's attention. She can say to him: this is red, this is green, this is yellow, this is white; and that is enough.

That something similar could be done in the moral realm might seem marvelous, but perhaps the first moment also seemed marvelous in which it was stated that to teach the colors we must say: this is red, and this is green; because people believed that to teach the colors long discourses were necessary as today people believe of good and evil that to teach this good and this evil long discourses are needful. It is precisely something similar in the moral life which may be done in this way. And I do not say this as a novelty nor to arrogate to myself either much reason or much merit, but because I have seen that it has been done in this way and because history tells us that it has been done in this way.

When, for instance, Moses gave to the Hebrew people the law of life, he gave no great lenten preachings, but he gave tables on which it was stated: "I am the Lord thy God, do not kill, do not steal, do not be a false witness, do not be vicious, do not covet another's goods." What evolves from this? A religion, the life of a people, the promise of the Messiah. What did Moses say? Something positive: honor God above all: And then: Do not do this, do not do that other. Believe in God and do not do evil, and that is enough. But both things together; because more than this cannot be done. Man cannot do more than this. Purge himself from evil and cling to God above all. Certainly the laws

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of Moses are primitive, as when we show the extreme colors and say: This is red, giving a very brilliant red, and this is green, giving a brilliant green. Thus Moses said: Do not kill, do not steal, etc., do not do these outstanding things. Yet for a primitive people this already was much, but first of all he said: Believe in God because the remainder will come of itself.

Moses did not desire to give the refinements of this, or perhaps he believed he had given means for refinement. Why? Because he had said to the people: Believe in God above all and then remove the impediments to God's action and let us wait and observe through centuries, provided that the people remove evil and always believe in God, for if this was forgotten there might be degeneration.

When people say "Let us give the child an idea of God," what are we to do to give the child the idea of God? How shall we give the child religious education? At what age must we educate the idea of God? I surely would not know how to answer except by the common tradition. It is a great pretension to give an idea of God by our own ability. The idea of God may be given by simply saying; "Feel God," and he feels Him; but can we give him this feeling? It needs must exist. And there is a fact recognized by spiritual people: that for approaching God there exists a road which is precisely that inner sensitiveness, which makes us feel good and evil; it is the men sensitive to peace and to good who are near God, who find God; and the men who are beginning, the converts, for instance, feel a great shock within them which consists in the necessity for purging themselves from evil. The convert feels within him a violent sensation of being above all a sinner. When he confesses having

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done wrong and feels that he did wrong, that is to say, that that evil which at first was rooted within him, is uprooted and he feels it as something remote; this is the joy of one who is converted: this evil no longer forms part of him, inasmuch as he repudiates it, whilst at first it was rooted in him, but he did not feel it and he did not feel God. It was a stumbling block on the road to God whilst he who uproots evil feels God; it is a road of sensitiveness. To feel God does not mean to say "I feel God: nor to know well the history relating to God's actions or the history of the various religions. To feel God is a different thing, it is to simply feel him. Now one may be a priest of the church and not feel God. Christ said: "Whited sepulchres, Pharisees." For they kept to the law and spoke of God, but had not this sensibility. And, for instance, Christ said: "Blessed are they who suffer for they feel and will go along the ways of God." For he who suffers has sensitiveness and is not a whited sepulchre like the Pharisees who did not perceive God. Blessed are those who feel, because having this sensibility they can refine it; blessed because they will meet God.

The difference in ^{the} preaching of Christ as compared to the Hebrew preaching may be considered on a single point: The Hebrew preaching said: Love thy neighbor as thyself. And the preaching of Christ is summed up in his discourse: "Dost thou believe that I love thee much?" Yes. Then love other men as I have loved thee." Do not love them coldly as you love yourself but as I have known how to love thee. By multiplying this sensibility in a great, and infinite manner: herein lies the new life.

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But to do this we must begin with a feeling being, hence blessed are those who feel, for he who does not feel is a corpse.

Now what is called the voice of conscience or inner sensibility, which undoubtedly is the foundation, the substance without which there cannot be religious or moral education, but only illusion, the whitening on the supulcore, is a great thing. How can we make it develop in others, if we do not already possess it as knowledge, we teachers? Since the teachers generally prepare themselves with "knowing" which is a fruit and consequence of the external senses; but not with "knowledge" which has its formative courses in the sense of inner conscience. At least that this fact may be acknowledged; in order to give moral and religious education it is not sufficient to know programs be they of morality or of religion, and to develop them, for with this we can only give vain ideas if there is not this inner sensibility on which the whole moral and religious life must be constructed.

You will say: But how can we by giving a species of sensory education give religious ideas, the idea of God, how is this possible? They are two different things.

Indeed it is true. However, I have replied first: we do not hold God in our hands so that we can give Him. If we believe in God, Then let us leave Him to work, let us leave Him to act, and not hinder His action. As we perform an act of faith when we believe that the child has in himself activities by which he develops his motility, thus we may think that the possibility of feeling God may exist in the child. What we can do is to give a simple idea, to give a forewarning of this idea, for instance saying to the child: "Pay attention to your inner

self, and if you are good, you will hear God. And if the little child understands us and in his meditation really hears God and prays and feels the soothing which comes to Him from this, and the strength to continue in well-doing, we certainly have not given him all this. We have only said to him: When you are good listen within yourself and you will hear. He has had to make the effort to be good, to inwardly collect himself, to listen to God. Samuel running to Eli said: "You called me!" And Eli answered "No, I did not call you." Perhaps it was God who called you. Listen for him and hear what he tells you.

What we do with education in general according to this method of conceiving of education, is to prepare the mechanism, the ways, and to leave life to itself, to aid and prepare the mechanism and the ways. When we, for instance, prepare the first paths for graphic language and only teach the child to write we prepare ways of expression for his intellect; now these ways which we prepare for the expression of his intellect are quite other than the expression of his intellect; they are the preparatory ways so that his intellect may develop. When we teach him to make certain special movements, we set in order ways by which the muscular activity may develop. When we try to regulate his mind so that he may take his place in the world we do not mean to limit ourselves to setting his mind in order, but we give him fundamental order, we prepare direct roads for his intellect so that it may develop. Now we can do a good deal in the preparation of the ways, but we can do very little as regards what is great in man. Indeed, we may say, that our action is like that of Saint John the Baptist as regards Christ, before

26,17.

Christ came there was his forerunner; in everything there must be a forerunner; there is the forerunner of the scriptures; there is the forerunner of the discipline in school; in every thing there must be a preliminary labor which prepares the way, the labor which will provoke a development which must be free, which may be very great, but which does not depend on us. Thus Saint John the Baptist prepared the way of God, prepared for Christ. What does the forerunner do? Saint John the Baptist says "I am the voice crying in the wilderness," that is, where nothing exists and where nothing is ready, "Make straight the paths of the Lord." For the Lord cometh, and that He may come, the paths must be made straight. "Purge yourselves of your sins, repent." He is the voice crying in the wilderness where chaos exists. And also in the whole of education there must first be something which puts order in the chaos, which removes the stumbling blocks, and then there must be the concept of expectation; await the great thing which is coming. When? This great thing which is coming comes when all is ready, when the path is made straight, so that it may come. This is a general fact for the development of the intellect also to prepare and straighten the ways and to await genius if it exists. Thus in the moral life the way must be prepared and made straight and the action of God awaited.

Besides this is the principle of all religions which teach man not to be proud believing he acts of himself, for it is God who works in him when he has grace. And what must man do? He must first prepare the ways, purge himself from hindrances and then assist grace, wait that grace should come to him and resign himself if it does not come. In this exists his virtue. But no one pretends that man takes God, and distributes

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26, 18.

Him or appropriates Him so as to enjoy Him. And then if this is so, we cannot hew Him into small pieces for the children, unless this be an intellectual part, the knowledge of history; but he who believes in God will not stop short at history, but will aid the child towards God. He who does not believe may content himself with history, but he who does not feel God does not understand the history and this then becomes careless or fablelike.

So true is this that in Italy where religious education has been abolished in the schools, there was a perior preceding this in which the teachers were told to teach religion, but without asking them if they were believers or atheists, for it was stated even if they are atheists it does not matter provided that they teach religion. And then those who were atheists taught religion just as they taught geography, for instance. Between this teaching and that of making God felt evidently there lies an abyss.

Hence, as I said, this teaching must be very brief and the teacher herself ought to have performed great sensory exercises of conscience and to have felt God, otherwise she will not know how to educate the children and to claim to help the children who are in a state of spiritual virginity. Indeed, people say "Like a child" to indicate the spiritual life. We see that the adults who have left behind their childhood set themselves the problem of how to give moral and religious education to the child. The preparation of the teacher in this case has a deep importance, for is she refined in her conscience? And granted that she be fine as to her conscience, does she know the paths of inner discipline along which grace diffuses itself by means of its spriggs. We all believe

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86.10.

we are moral and sensitive in our consciences, however, we have evidently not reached such a degree of refinement, as to have this special sensitiveness in the well-being of conscience parallel to an external sensitiveness such as to distinguish the color gradations, I do not say of eight but of one hundred colors, in all existing tints; nor perhaps have we the whole of that sensitiveness which is sufficient in the external for hearing the screeching of the wheels of a passing tram as a disagreeable noise, for we feel tranquil in society, which in itself has many offences which leave our consciences sleeping. That means that we do not possess this sensitiveness. So true is it that to discover criminals the crime must be discovered, otherwise the criminal can live a long time in society without being discovered. Why? There must be a very great lack of sensitiveness to not have felt before that this criminal was such.

Santa Teresa when some evil person came near her used to say "I smell a pestilent odor," but the others had not felt it. Vice versa a saint of the desert, seeing a lost woman beautifully dressed pass by followed by a troop of young men, said to the other desert men "How beautiful this woman is." The others marveled to hear this saint speak thus of this woman. But the next day the woman had repented, since in the very moment in which she was passing by in that desert, her soul had spoken; the others had not heard it, whilst the saint had recognized it and hence had said "How beautiful this woman is."

Certainly we are far from such sensitiveness; but not alone from this. So true is it, we ask ourselves if there is an absolute good or not. And we are almost decided against it, because we see that in

26,20.

society the idea of good changes. And then we are as those ignorant peasants who hear art talked of for the first time and do not know how to distinguish it, yet they want to appear intelligent and ask if this work of art is beautiful, and they say that if the great majority of people say it is very beautiful, certainly it is beautiful; but before deciding they ask if it is beautiful. Is there a school of such a century which appreciates it very much? Then it is true that it is beautiful.

Certainly absolute beauty does not exist for in one century that is considered beautiful which in another century is not considered beautiful. At any rate such a person is very far from supposing that there can be forms of perfect beauty incapable as one is of judging.

And thus many times we lie back on the judgment of society as to the moral question. Society says this is moral, certainly it is moral. And indeed there is a basis of truth. Inasmuch as this morality is useful in this form of society. Thus there was a period in which the macrocelai type was settled on in art, and we have Botticelli. It is a beautiful type but it is not absolute beauty. Then it was the turn of the brachicealli type and Rubens came into fashion. It is beautiful but it is not absolute beauty and he who is not an artist does not know how to judge of it and still less can he state that there is an absolute beauty. Thus there is beauty and moral beauty in society, inasmuch as this beauty represents to us the stability of a great idea, but we can do as a great artist, admire this epoch of art but await progress.

Now if the good of society is not the absolute good, it is not stable, so true is it that it changes, that is to say, that there is a

greater good, absolute, sola, as the truth which has assured life, and life is one and its laws are established and man tends with mysterious and supreme aspirations to attain to them. All social revolutions are due in reality to revolutions which man makes in drawing near to this absolute good. Thus as the child rebels against us when we do not want to have him follow the road of his own salvation and judge him as naughty, so man at certain times rebels against a social state because he has felt a higher state and wishes to make a further step towards that good; but the people who take this further step must have this sensitiveness which makes absolute good and evil felt and not only that transitory good and evil of society. As the connoisseurs of art criticize and enjoy Botticelli and Rubens, yet aspiring to perfection, thus moral men are above all righteous in society, but they aspire towards the divine absolute good.

Today in civil life there are crimes tolerated and forms of barbarism, of injustice, and of slavery, and we do not feel them, and live tranquilly; then before educating children to morality, let us try to feel this morality and our action towards the children will be great when we prevent them from doing the outstanding evil we are capable of seeing.

Indeed this is really the point: that to become educators we must begin with educating ourselves and do as a certain king. I no longer remember who the saint was to whom he was speaking. The king said: "It seems to me that my people are not good, there exists corruption, and I should like to make a great reform, give me your counsel." The saint said to him: "Majesty, your idea is great, but difficult to accomplish." The king answered: "Yes, that is true, however, give me

26,22.

your advise." And the saint said: "Well, begin with the court which is near to you and with yourself. When you have accomplished that you will afterwards see reform clearly."

We certainly all study so as to teach geography and history intellectually, and we believe these studies ought to be made according to a method, and that is to say that it is not sufficient to live in the world and to take the sensations of the world and pass judgment. No, we perform certain special studies and only after these do we call ourselves teachers. Thus it must be the same in that other field.

Granted this fact of having sensitiveness to good and evil, which is a starting point, the substance itself, the supreme necessity without which all the rest is words and not spirit, only after this do we know the ways of inner discipline. Now the ways of inner discipline are difficult ways. The religious teachings are in general instruction in all these things.

Many say: "Is it necessary to have a definite religion or is it enough to have an idea of God?" Look at the history of the nations. They fundamentally organized a religion. The vague idea of a God does not endure and does not give universal fruit, but if it is clothed in a definite form then it endures and lives. It would be like the question of a being who was not yet alive, who had not yet entered the realm of the living, who might say: I should like to be alive, however I do not want to have a special form, neither to be man nor horse nor tree, but only alive. But if he does not wish to be placed thus as one of the definite living beings how can he enter life? To enter life a form must be embraced, otherwise life is not actualized.

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All religions in general give such simple instruction; this is red, this is green; this is good and this is evil; and this gives a sure guide which causes us to walk along a certain path which is more or less indefinite but which is a path of life. Along it man should find the course of his own discipline, life that flows between its divine laws, and hence his liberty similar to that of all beings obedient to God. And only in finding this, the only way, has he greater creative powers, progress and the sensation of being united with God.

Now to finish this lesson which certainly is not illustrative of the fact, but only of its difficulties, I should like to read the prophecy of Baruch concerning discipline and the ways of spiritual discipline, which makes us think of the difficulty and the greatness of what we sometimes see too lightly touched on:

^{Learn wisdom.} ~~Hear~~ O Israel, the commandment of life; give ear, that thou mayest learn wisdom. How happeneth it, O Israel, that thou art in thy enemies' land? Thou art grown old in a strange country, thou art defiled with the dead; thou art counted with them that go down into hell. Thou hast forsaken the fountain of wisdom; for if thou hadst walked in the way of God, thou hadst surely dwelt in peace forever. Learn where is wisdom, where is strength, where is understanding; that thou mayest know also where is length of days and life, where is the light of the eyes, and peace. Who hath found out her place? And who hath gone into her treasures? Where are the princes of the nations, and they that rule over the beasts that are upon the earth? That take their pastime with the birds of heaven; that hoard up silver and gold wherein men trust, and there is no end of their getting? Who work in silver and are solicitous,

and their works are unsearchable? They are cut off and are gone down to hell, and others are risen up in their place. Young men have seen the light and dwelt upon the earth, but the way of discipline they have not known. Nor have they understood the paths thereof, neither have their children received it, it is far from their face. It hath not been heard of in the land of Chanaan, neither hath it been seen in Theman. The children of Agar also, that search after the wisdom that is of the earth, the merchants of Herra and of Theman, and the tellers of fables, and searchers of prudence and understanding; but the way of wisdom they have not known, neither have they remembered her paths. O, Israel, how great is the house of God, and how vast is the place of his possession. It is great, and hath no end; it is high, and immense. There were the giants, those renowned men that were from the beginning of great stature, expert in war. The Lord chose not them, neither did they find the way of discipline, therefore did they perish. And because they had not wisdom, they perished through their folly. Who hath gone up into heaven, and taken her, and brought her down from the clouds? Who hath passed over the sea, and found her, and brought her preferably to chosen gold? There is none that is able to know her ways, nor that can search out her paths: but he that knoweth all things, knoweth her, and hath found her out with his understanding: he that prepared the earth forevermore, and filled it with cattle and fourfooted beasts: he that sendeth forth light, and it goeth; and hath called it, and it obeyeth him with trembling. And the stars have given light in their watches and rejoiced. They were called and they said: Here we are: and with cheerfulness they have shined forth to Him that made them. This is our God, and there

26,24a.

shall no other be accounted of in comparison of him. He is the inventor of the way of discipline and gave it to Jacob his servant and to Israel his beloved. Afterwards he was seen upon earth and conversed with men.

The text says "He is the inventor of the ways of discipline, it is he who must give the ways of discipline." Here then the prophecy points to Christ who should come to give ways of discipline and to teach the ways of discipline. In any case the ways of discipline are united to the same point of creation, to the same ways which lead the individual to develop by means of his natural forces. This is the sole and deep fount which brings about the great development of man from his muscles to his conscience. It is seen that in the inner life of man there exists a whole assemblage of forms of life, which has fixed laws, but as to these forms of inner life, he who does not feel them or does not experience them does not know them, and still less can he teach them.

Hence the problem remains a problem; although in a certain degree explained in this sense: That it is not as easy as it is thought to be to give moral and religious education and that it is fundamentally necessary to give it. But what comforts us is that we can only try to prepare the way for moral and religious education. And if this method should place in the dominion of the school, within pedagogic limits, in the preparation of the teachers this principle; that the teachers need to perform this sensory exercise and that they should be sensitive in every way to moral facts, and that they should be religious if they wish to give religious education, otherwise religious education is a word, is an illusion, that would already be, if I am not mistaken, a kind of contribution to the illumination of such a formidable realm as that of moral and religious education. Because in comparison to this realm all the rest is as nothing. In this lies the substance and value of man and all his power, and he who has done nothing in this domain is

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beyond the possibility of giving a great contribution to the awakening of man. But if you begin to give the first elements of a method of education which in every way regards man as a created being possessing his own laws, which exhorts absolute respect for these laws, with this method pushes towards making us understand that we cannot do nothing and that with great labor we can do but little; already this method would have laid in the practice of educational life a foundation stone a basis for religious and moral education, in a positive method, for it only sets, as the rest of the method does, it sets a fact of labor in a definite place, and within certain definite limits which are the limits of a method of education and brings forth by this method of education not alone a reformed school but above all a reformed teacher, whose preparation must be much deeper than the preparation which she has had until this time. Until now she had the profession of pouring out something, and now instead she assumes this other mission of being a scientist and a teacher: a teacher in the sense of a guide along the road of wisdom; scientist in the sense of an observer as to life, drinking in the manifestations and satiating her spirit. Hence it greatly raises the personality of the teacher from the level she had formerly, therefore it places before the conscience a task both vast and long; in the performance of which I hope we may go forward together in the future.